

# THE GAME AND ITS ROLE IN THE RECOVERY OF STUDENTS WITH SPECIAL EDUCATION REQUIREMENTS

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**Abstract:** *In the first part of the article, the main concepts from the specialized literature are defined: learning difficulties, speech disorders, special education requirements, game. This report aims to demonstrate the effects of intervention through game on students with special educational needs. It starts from the assumption that pupils with SEN who will participate in the training through playing will get better results in the recovery process. A case study is presented to that end. The results showed that intervention through game favoured motricity, the development of responsive participation in language development, and fostering the development of oral communication, mathematical skills, motivation for learning and development rules. The objective of future research is to verify the game effects in the cognitive and non-cognitive development at a larger number of students with special needs.*

**Key words:** *special educational requirements, language disorders, learning difficulties, game.*

## 1. Introduction

### *Special Educational Requirements*

Vrăsmaş, Daunt, and Muşu (1996) considers the “special needs” those requirements in relation to education, which are additional and complementary to the general objectives of education. The following categories are included in this syntagm: emotional and behavioural disorders, mental/retardation disabilities, physical/motor disabilities, sight impairment, hearing impairment, language disorders, learning difficulties.

### *Learning difficulties*

Around the concept “learning difficulties”, there is a varied terminology, controversial among specialists. According to Horst and Zenke (2001), learning difficulties are manifested especially in the area of efficiency, most often are related to repeated failures and have an undesirable influence on the development of personality. According to Gherguţ (2005), learning difficulties refers to a heterogeneous group of disorders due to certain minimal dysfunctions of the Central Nervous System, expressed through major difficulties in the purchase, use and understanding of language, speech, writing, reading, difficulties in using mathematical calculation and other social skills.

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*Speech disorders*

“Language disorders are the totality of the dysfunctions of the linguistic behaviour” (Larousse, 2006, p. 704). “The shortcomings are due to language difficulties occurring in the perceiving, understanding, development and achievement of oral and written expression” (Cocoradă, & Năstase, 2007, p. 156).

*Game*

Şchiopu (1997) defines play as a form of child-specific activity and critical to his/her mental development. Popescu-Neveanu (1978) is of the opinion that the game also develops the perceptions and representations, but also the mental intellectual processes, memory, thinking, imagination. Voinea (2010) demonstrates the effectiveness of the use of games in the psychomotor therapy program in children with mental deficiency. It starts from the assumption that a play therapy program will lead to substantial improvements on the ability of coordination and balance of students with mental deficiency, included in the therapy program. The experiment took place over the course of two years, with an experimental group and a control group, each of the 25 subjects with mild and moderate mental deficiency in the senior years. The experimental group will follow the psychomotor therapy programme, with play as its main means of intervention in various forms, within the classes of physiotherapy, while the control group will not follow any therapeutic psychomotor program. Following the implementation of the programme of the proposed therapy, the experimental group overcomes the initial deficit, making considerable progress compared with the control group. The scientist also found that the students participating in the therapy program are more determined, more confident in their own abilities, the therapy program having positive effects on the whole mental structure of the mentally deficient student. Porfireanu (2006) starts from the assumption that the use of dynamic games in physical education classes in special schools facilitates shaping the personality traits of the pupils with disabilities. His study in 2004-2005 in a special school in Bucharest, on a group of 12 students has shown that through the content, form and effects, the dynamic games provide favourable conditions for the development of mental processes and personality traits of pupils with Special needs. Kalmar and Ivanovici (2008) demonstrate the effects of individual and group game on a group of students with Special needs from the Special School in Pişchia, Timiș. The students participating in the study had in the 6<sup>th</sup> grade, according to the medical and educational , an IQ between 39 and 64. The adaptation of the curriculum through play was made for the biology course. It was concluded that the concepts taught through ludic activities are easier to remember for a longer period. It has been shown, moreover, that in those cases in which parents and the family were actively involved in the learning process, the children with special needs had much better results.

**2. Research Objectives and Hypothesis**

The objectives of the research are:

- To identify the effects of the educational game in the language development.
- To identify the effects of the educational game in the development of the perceptive-motor structures.
- To identify the effects of the educational game in the development of mathematics skills.

- To identify the effects of the educational game on the behaviour during the teaching activity.

Starting from these objectives, the following hypothesis is formulated: "Pupils with SEN in inclusive classes who will participate in the training by playing sessions will get better results in the recovery process. "

### **3. Methodology**

#### *Design*

The design of the research is the design with a single topic, with pre-test and post-test phases. The variables involved in this research are:

- the independent variable: the game as an educational activity
- the dependent variable: perceptive-motor structures (dimensions: motor skills, body schema, spatial orientation, time orientation, rendering of a model, colour, form), language (communication and vocabulary), mathematical skills (dimensions: pre-numbering elements, numbering), behaviour during the activity (attention during the activity, voluntary effort, mood, frustration tolerance.)

#### *Participant*

S. is an 11-year-old schoolboy and is in the 2<sup>nd</sup> grade. S. is a student with special needs, severe disability, integrated in a normal school with personal assistant. The boy lives together with his parents and younger brother in good conditions. Both parents are college graduates. The parents proved to be very interested in the student's progress at school at the beginning of the school year. At the request of presenting some medical documents, the mother agreed, but the only documents brought to the student's record are the handicap certificate and the school orientation certificate. According to the mother, the student has gone through various operations to correct his posture, movement and the position of the hands. The student has benefited from speech rehabilitation therapy and specific therapies in another country. At birth, the brain was flooded with blood, his head swollen (information from the personal assistant). He attended the special kindergarten for deaf children because it was believed that he had difficulties in hearing. Currently, he does not benefit from any specific therapy, his mother being the one who educates him. Within the school, the student attends the resource room and works with the support teacher twice a week and once a week is involved in rehabilitation therapy with the school speech therapist.

#### *Procedure*

- Informing teachers and parents in relation to the course of this research and obtaining their permission
- Implementation of the instruments in the pre-test phase for the initial assessment
- The diagnosis of the problems on which the intervention will be done
- Implementation of the experimental treatment (intervention through game)
- Implementation of the instruments in the post-test for the final assessment.
- Data entry and results analysis

#### 4. Methods and Instruments

##### *Instruments used in the initial evaluation stage (pre-test)*

- *Sheet for the determination of language development stage* (adaptation based on Păunescu, Muşu, Lupu, & Kostyak, 1982) comprises the assessment of the area "Communication and Vocabulary". The items can be completed by observation conducted in direct contact with the student and during the teaching tasks in relation to the curriculum. The items refer to the presence or absence of difficulties with regard to the language. The items are assessed on a scale from 1 to 3, where 1 means severe disturbance, 2-average disturbance, 3- mild disturbance. A small score indicates delays in language development.
- *Evaluation sheet for the perceptive-motor structures* (adaptation based on Oprea, & Vrăsmaş, 2003; Muşu, & Păunescu, 1990). This information sheet includes the assessment of the following areas: Motor Development, knowledge of body schema, spatial orientation capacity, temporal orientation capacity, the capacity of rendering a model, the concept of colour, the formal perceptive motor structure. The items refer to the main difficulties encountered in the assimilation of the perceptive-motor structures. The sheet is to be completed while carrying out specific tasks, through direct contact with the child by checkmark from 1 to 3, where 1 means severe disturbance, 2-average disturbance, 3- mild disturbance. A small score indicates difficulties in appropriating perceptive-motor structures.
- *Worksheet evaluating the mathematical skills* (adaptation based on Oprea, & Vrăsmaş, 2003). The worksheet evaluates the presence or absence of Maths acquisitions in the following stages: Pre-counting (examples of items: sort the objects on criteria such as colour, size, form, can establish the correspondence between the elements of two sets etc.), Counting (encodes the quantity through the figure, knows the sequence of numbers from 0 to 30, compares numbers etc.) The logical-mathematical abilities are assessed during specific tasks, through direct contact with the child, on a scale from 1 to 3, where 1 means severe disturbance, 2-average disturbance, 3- mild disturbance. A small score indicates difficulties in acquiring mathematical skills.
- *Information sheet evaluating the behaviour during the activity* (adaptation based on Oprea, & Vrăsmaş, 2003). This information sheet contains 25 items that assess the child during the activity on a scale from 1 to 3, where 1 means the absence of behaviour, 2-partial manifestation (sometimes) of the behaviour, and 3 the common presence of the behaviour. A high score is associated with a disturbance of attention and difficult behaviour. The items refer to *attention* (can't stay quiet, he is inattentive, can't focus during the activity, he is difficult to involve in the activity, he often changes the activity), *motivation* (does not show interest regarding the activity, he is bored, does not finish what he started, gives up easily, does not react to rewards, praises, smiley faces) *volunteer effort* (is passive, has no initiative, refuses to carry out a new, unknown task, refuses to cooperate, refuses to work in a team, initiates conversations to get away from the task), *mood* (he is angry, he changes mood, swings from one mood to the other, he is shy, speaks slowly, doesn't say too much), *difficult behaviour* (is rude, disobedient, refuses to share, is easily influenced, imitates the others, is disorganized), *tolerance to frustration* (is negative, he starts with I don't know, I can't, does not accept criticism, to be corrected, is afraid to give an answer, is jealous of other children).

*Methods used in the intervention phase*

- The curriculum adaptation program
- The personalized intervention plan (PIP)
- Observation

*Instruments used in the final assessment phases (post-test)*

- The same methods and instruments used in the initial evaluation stage.

**5. Results in the Pre-test Phase**

The initial assessment was conducted during the first two weeks of the school year by the teacher and teacher assistant.

*The psycho-pedagogical characterisation of the subject*

*General and fine motor development:* poor

*Characteristics of the sensory-perceptive function:* the visual way of receiving the information is predominant

*Perception:* can reconstruct an object/image of the parts (two, three parts)

*Laterality:* left

*Body schema:* indicates his body parts and those of his partner, with help

*Spatial organisation:* positions on request an object on the coordinates up-down, left-right

*Notions of size:* doesn't know the notions of large/small

*Notions of quantity:* doesn't know „more than/less than, full/empty”

*Notions of form:* does not recognize geometric figures, fills in with difficulty a template with forms

*The concept of colour:* he recognizes colours, with difficulty

*Temporal organisation:* unaware of the duration concept, of the seasons

*The level of intelligence:* mental deficiency (test applied: Goodenough Test (Little man) (Vrășmaș, & Oprea, 2003). Little man is almost unrecognisable. Head, body, hands, feet, eyes and nose are present in the shape of circles drawn some over the others. The student was asked where the head is, where the hands and feet are and he showed the circles. Two circles are drawn for the hands and two for the feet, two circles in the one destined to the head are the eyes. Other parts of the body are not present.

*Memory:* short-term, mechanical memory

*Auditory memory:* poor

*Thinking and thought processes:* the stage of concrete operations, mental operations are rigid, the present classification (can classify objects, images according to criteria such as size, colour), understands and operates with simple concepts.

*Expressive language:* does not communicate orally, uses gestures to express her/himself

*Receptive language:* reduced vocabulary, understands simple words, understands the task, the verbal order given in simple, short sentences

*The phono-articulatory apparatus:* malformation of the phono-articulatory apparatus, mastication and deglutition disorders

*Breathing:* breathe in-breathe out imbalance (breathes through the mouth)

*Hearing:* normal

*Phonemic hearing:* deficient

*The capacity for phonemic analysis and synthesis:* insufficiently formed

*Writing skills:* absent

*Reading skills:* absent

*Calculation skills:* absent

*Attention:* low level

*Motivation:* he has no motivation for learning

*Attitude towards speech:* avoids effort, the need to talk hasn't been created

*Imagination:* absent

*Conduct during the lesson:* only physically present

*Conduct during therapy:* refuses to work, does not comply with the order of the activities, refuses to sit in the resource room without the personal assistant, does not follow the rules

*Conduct in the group:* the colleges accepted him, goes into the school yard together with them, some of them have assumed the role of taking care of him, plays with them, but when he is not understood becomes aggressive easily.

*Affectivity:* cheerful, low resistance to frustration (when he does not do the task properly, he no longer wishes to continue the task)

The table 1 shows the scores obtained by the student in the initial assessment.

*Scores, initial assessment*

Table 1

<b>The development areas</b>	<b>Mean</b>	<b>The development areas</b>	<b>Mean</b>
Communication and vocabulary	75	Graphic rendering	16
Motor skills	24	Colour	6
Body schema	17	Shape	8
Spatial orientation	14	Pre-numbering	15
Temporal orientation	13	Numbering	20
		Behaviour	69

## 6. Intervention

The intervention plan includes activities and is applied throughout the school year, twice weekly by the support teacher, within the integrative school in the resource room.

The objectives of the intervention plan are: 1) the formation of the complying with rules behaviour, 2) the development of motor-perceptive structures, 3) vocabulary development, 4) phonemic hearing development, 5) fostering verbal communication, 6) development of reading-writing skills, 7) cognitive stimulation, 8) mathematical skills development

The stages followed in the program of intervention through game were:

1. *Language development* (adaptation based on Paunescu, Muşu (1990), Paunescu, Muşu, Kostyak, & Lupu (1982)
2. *Development of mathematical abilities* (adaptation based on Paunescu, & Muşu, 1990); Paunescu, Muşu, Kostyak, & Lupu, 1982).

*Language development* has aimed at:

- *The development of vocabulary* (the thematic vocabulary and the orthoepic and spelling vocabulary)
- *Developing the writing and reading skills:* 1) Training hearing; 2) Visual training; 3) Knowing the colours; 4) Visual memory; 5) Visual-motor coordination; 6) Space orientation; 7) Body schema; 8) Laterality; 9) Time organization; 10) Forming correct

articulation skills; 11) Developing graph-motor ability; 12) Graphic exercises; 13) The period of words and graphics.

The development of *mathematical abilities* aimed at:

- *The Pre-Ball Stage*: 1) the ability to sort, select and form sets (sorting objects, images with objects to form sets according to a criterion; the trials can be done according to criteria such as shape, colour, size, perceptive structures previously learnt, 2) ability to identify, 3) ability to assess the quantity (formation of piles similar to the ones made by the teacher, reproduction with sticks of the objects in the image, the formation of piles with a number of objects corresponding to the number of sounds heard, 4) grouping abilities, pairing, sorting, classification, arranging in series

- *Scheme of learning a number*: 1) the global image of the number (images with sets of objects showing the respective number (e.g., five fingers, five squares, gamma cards), 2) creating the idea of quantity (put labels, tokens with numbers beside the sets), 3) number as the expression of a set

### **The Evolution of the Subject following the Intervention (post-test stage)**

There has been an evolution in terms of:

*Behaviour*: works in the absence of the personal assistant, complies with the order of the activities, though he soon gets bored of an activity, he no longer destroys the materials, greets at departure, reacts to STOP and knows the significance of the reward. He receives homework, worksheets with letters and numbers in order to develop her/his sense of responsibility. He is motivated to finish the task when told that he will get toy cars.

The overall score obtained by the student in the pre-test phase at behaviour assessment was 69, while in post-test the score decreased to 33.

*Difficulties encountered*: There are times when he stomps her/his feet, when he gets tired or no longer wants to work. Reacts to STOP. With the hand on his hand, the task must be solved, abiding with the rule.

*Recommendations*: a constant schedule is recommended at home too, including behavioural shaping through rewards.

*Fine motor development*: he can colour a drawing, drawing a bit outside the lines, can model in modelling clay, can grab small objects with difficulty, and can crinkle papers.

*Difficulties encountered*: the poor position of the fingers while writing (manages only with help to draw on the outline).

*Recommendations*: exercises in order to consolidate the acquisitions and to develop fine motor skills.

*Perceptive-motor structures*: indicates his body parts and those of his partner, without help, positions on request an object on the coordinates up-down, left-right, without help, knows the notions of large/small, more than/less than, full/empty, recognize geometric figures, fills in a template with forms, recognizes colours, recognizes the seasons.

Figure 2 shows the scores obtained by the student in the pre-test phase in comparison to the ones in the post-test phase.

*Reading skills*: he reads the letters, doesn't read the syllables.

*Oral language*: uses in the current speech the words he can say.

*Receptive language:* enriching the vocabulary by introducing new words (e.g. in the category of animals - giraffe, hippo, rhino, zebra - recognition and classification).

The score obtained by the student at communication and vocabulary in pre-test was 75, while in post-test he obtained 107 points.

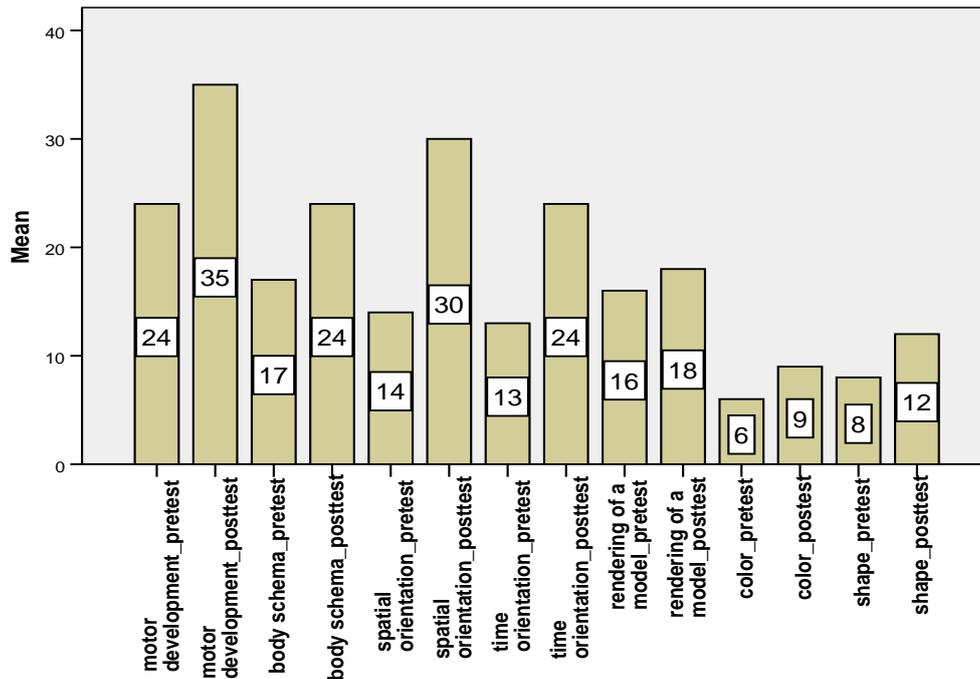


Fig. 2. Scores in "Perceptive-motor structures" in the pre-test and post-test phase

*Difficulties:* refuses to do exercises for the mobility of the phono-articulatory apparatus. In exchange, he accepts to blow up balloons and small papers. He cannot identify the sound with which a word begins.

*Recommendations:* increase the number of exercises of approximate imitation that prepare imitation at the phono-articulatory level, the development of the phonemic hearing and of the auditory memory, the development of vocabulary, and phonetic integration.

## 7. Conclusions

S. is a student with special needs, severe disability, integrated in a normal school with personal assistant. On the course of the school year, he has benefited from educational support twice a week in the resource room along with the support teacher and speech rehabilitation therapy once a week with a speech therapist. The student is not included in another program of recovery and therapy to follow on a daily basis. The recovery program from school had as a priority to bring the student under control and to form the behaviour regarding listening and compliance with the rules. At the same time, it has aimed at the development of the expressive and receptive language and the cognitive stimulation, the main difficulty of the student being the lack of oral communication,

against a mental disability. The stimulation of language and cognitive processes has been done through game. Thus, motor games, sensory games, imitation games, cognitive stimulation games have been used. As a result of the intervention through game, the student has made substantial progress with regard to behaviour, motor development and vocabulary development.

The results of the intervention through game in students with special educational needs are supported by studies from the literature cited above. The student needs further daily therapy, daily program and constant encouragement. The collaboration with the teacher and the speech therapist have been a valuable support. The presence and involvement of the parents in the program and the continuation of the program at home would have doubled the student's progress.

The objective of a future research is to check the effects of the game on cognitive and non-cognitive development at a larger number of students with special needs. Also, it would be interesting to check the effects of the educational game on the computer in the recovery of this category of students.

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## References

- Cocoradă, E., & Năstase, L. (2007). *Fundamentele psihopedagogiei speciale. Introducere în logopedie* [The fundamentals of special Psychopedagogy. Introduction in the speech therapy]. Sibiu: Psihomedica.
- Gherguț, A. (2005). *Sinteze de psihopedagogie specială. Ghid pentru concursuri și examene de obținere a gradelor didactice* [Syntheses of Special Psychopedagogy. Guide for competitions and exams for obtaining the teaching degrees]. Iași: Polirom.
- Horst, S., & Zenke, K. G. (2001). *Dicționar de pedagogie* [Dictionary of pedagogy]. Iași: Polirom.
- Kalmar, K., & Ianovici, N. (2008). *Active and participatory methods in biology: teaching children with special education needs*. Annals of West University of Timișoara, ser. Biology, vol XIII, 89-100.
- Păunescu, C., & Mușu, I. (1990). *Recuperarea metodico-pedagogică a copilului handicapat mintal* [Methodological and pedagogical approaches to recovering the child with mentally disorder]. București: Editura Medicală.
- Păunescu, C., Mușu, I., Kostyak, C., & Lupu, F. (1982). *Metodologia învățării limbii române în școala ajutătoare* [Methodology of teaching the Romanian language in the special school]. București: Editura Didactică și Pedagogică.
- Popescu-Neveanu, P. (1978). *Dicționar de psihologie* [Dictionary of psychology]. București: Albatros.
- Porfireanu, C. M. (2006). *Studiu asupra modelării personalității elevilor cu dizabilități prin utilizarea jocurilor dinamice* [Study on the modeling of the disabled students' personality using dynamic games]. Analele Universității Spiru Haret, Seria Educație Fizică, Sport și Kinetoterapie, the III<sup>rd</sup> year, no. 3, 153-159.
- Șchiopu, U. (1997). *Dicționar de psihologie* [Dictionary of psychology]. București: Babel.
- Voinea, A. (2010). *Studiu privind optimizarea nivelului de dezvoltare al capacității de coordonare și echilibru la elevii cu deficiență mintală* [Study on optimizing the

- development level of coordination and balance in students with mental deficiency]. *Marathon Magazine*, Vol. II, no. 2. Retrieved from <http://www.marathon.ase.ro/pdf/vol2/22/Voinea.pdf>
- Vrăşmaş, E., & Oprea, V. (coord.) (2003). *Set de instrumente, probe și teste pentru evaluarea educațională a copiilor cu dizabilități* [Set of tools, samples and tests to evaluate children's learning disabled]. București: Mark Link.
- Vrăşmaş, T., Daunt, P., & Muşu, I. (1996). *Integrarea în comunitate a copiilor cu cerințe educative speciale* [The integration in community of children with special educational needs]. UNICEF România.
- \*\*\* (2006). *Marele dicționar al psihologiei Larousse* [Le grand dictionnaire de la psychologie]. București: Editura Trei.