

## RECOVERY OF CHILDREN WITH INTELLECTUAL DISABILITIES IN THE MASS SCHOOL

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**Abstract:** *The author presents in the theoretical framework some theories about intellectual disability, common in the literature; the characteristic features of this and the programs of recovery. The research is based on the idea that if a group of children with intellectual disability is subject to a game-based learning training, then they will make significantly greater progress than a group of children with intellectual disabilities who did not benefit from this training. On a group of 43 children were measured the progress made by half of them who underwent this training through the game. The results recorded after inferential data processing confirm the validation of departure assumptions. It can be concluded that the intervention program structured on different types of games has a high efficiency, which determines the need to introduce game activities to help children with intellectual disabilities to express themselves more easily within a framework appropriate from an emotional and educational point of view.*

**Key words:** *intellectual disability; school children; game-based learning training;*

### **Theoretical frame**

In order to support the theoretical foundation of mental deficiency, specialists in the field proposed several theories most frequently cited (Ghergut, 2005):

- *Etiological theory*: explains the nature of mental deficiency through the multitude of factors that determine it;

- *Symptomatological theory*: defines mental deficiency by reference only to certain processes and mental phenomena (thinking, intelligence, affectivity, will); Within this theory there were several currents:

- Seguin (apud Gherguț, 2005) characterized the mentally deficient as a person without will;

- Intellectual currents accentuate mental insufficiency, reduced mental level in defining mental deficiency;

- Lewin and Vigotsky formulate the dynamic theory of mental debility, integrating mental deficiency into the complex system of mental processes and phenomena, with all the consequences on the development and evolution of the personality of the subject (apud Birch, 2000);

- *Theory of specific syndromes*: it is supported by a series of theses, among which we mention the thesis of heterogeneity, heterogeneity, heterodevelopment, social incompetence, the theory of genetic viscosity, the thesis of the inertia of cognitive processes, thesis of stiffness of brain structures and others;

- *Psychoanalytic and Psychosocial Theory*: Explains the appearance of mental deficiency as an effect of lack of affectivity (especially of the mother) in the early years of life of the child, favoring the installation of a pronounced inhibition at the level of the

thalamus, lacking affective stimuli and leading to a structural-functional failure of the bark due to the suppression of stimulus intake at this level; it is known that through the genetic program in the early years of life the development of nerve links by increasing the number of synapses is based on a high incidence of cerebral stimuli and the concomitant occurrence of neuronal anatomo-physiological structures responsible for the acquisition of the information (Holdevici, 2000);

- *Integrated theory*: This theory, supported by Paunescu (apud Gherguț, 2005) explains mental deficiency as a pathology of organization and functioning of mental structures and personality as a whole.

Recovery programs for mentally impaired seek to harness the intellectual and aptitude potential of the mentally deficient child, assuming that any progress made in recovering and developing personal and social autonomy will allow for a higher level adaptation and integration into the family and community environment as a condition for standardizing the lives of these categories of people (Handley, Southwell, Kiel 2012).

Children with mild intellectual disabilities have an IQ ranging from 50 to 69, and decompensation occurs around the age of 1-13 years. The main characteristic is that by becoming adults, those with mild mental deficiencies can reach a satisfactory degree of social autonomy and a degree of economic semi-independence. However, they will always need a support person because they are not able to fully assume the responsibility of their conduct (Bertelli et al, 2016).

There are characteristic features of all forms of mental deficiency and have a certain degree of stability, become more and more acute as the deficiency increases, and as the elderly subject advances; they do not disappear through instruction and education, but they can get a masking character, emphasizing when the person performs intellectual activities or is in stressful situations.

*Rigidity* (Kounin, apud Bonchiș, 2004) - is the resistance to change including the idea of fixing, hence the difficulties in adapting to new situations; the mental deficient can not apply what has been taught in a new form, has a slow growth rate, the improvement curve is capped with psychic blockages.

*The rigidities of adaptive and behavioral responses* (Luria - apud Birch, 2000 - it denotes oligophrenic inertia). This oligophrenic inertia is adaptive insufficiency of behavioral responses to environmental changes, a phenomenon resulting in a strong lack of mobility of reactions, slow thinking, apathy in behavioral reactions or precipitated reactions due to storage of excitations above the normal range). Continuous repetition of an activity and after the stimulus that triggered it disappeared by keeping some gestures even when it is no longer necessary.

*Genetic viscosity* (Inhelder apud Schwartz, Kelemen, Moldovan, 2009). If intellectual development in children with normal intellect is characterized by dynamism in the transition from one stage to another, mental deficiency is characterized by slumbering, capping, regression, when it encounters difficulties in carrying out formal operations due to the non-determination of its mental structure. The deficient goes through the same stages but differently; development is characterized by specific slowness and by a long-standing stagnation, the sooner the mental deficiency is more pronounced.

In a normal child the shift from one way of thinking to another naturally occurs, tends towards a progressive balance, with a good stability of acquisitions that show that the new structure is working satisfactorily; in the mentally deficient mind, the evolution of thinking tends towards a false balance characterized by the viscosity of judgments, the fragility of the acquisitions, the inability to leave one's point of view to another - and when it reaches a higher stage, thinking retains the imprint of the previous level regressing when faced with difficulties. The mentally deficient oscillates between two levels of development (between

concrete operations in one area, and in another is intuitive - serials by length criterion but not by thickness);

*Oligophrenic heterocronia of development* (Zazzo, apud Zlate, 2004). Mental deficientes have a disharmonic development, they are uneven in different levels. These differences between the developmental rhythms of the various elements that form part of the psychological profile can be observed also in children with normal intellect, but in the case of the deficient they are generating disharmony; while in the normal child there is a concordance between the speed and the quality of the execution, to the deficient there is a very large gap (in realising a performance a 14-year deficient has the speed of a child of 12 years and in the quality of execution of one of 6-7 years ). This is a consequence of the interaction of the other traits of specificity resulting in a differentiated approach of the deficientes in the compensatory process both with respect to others and towards one's own person (he develops discordantly in relation to himself).

*Fragility of personality construction* occurs when the requests exceed the possibility of response; infant behavior is recorded, low-level logical operations do not help to build stable social relationships. Personality can be: dissociated - with manifestations of impulsivity, hardness, lack of control under environmental unsecured conditions; or masked - to those living in a secure environment;

*The fragility and lability of verbal behavior* (Verza, 1997) is expressed by the inability to logically and grammatically express the contents, the situations, the impossibility to maintain the verbal conduct of continuous progress, to adapt it to various situations; is manifested through language retardation or frequent language disorders.

Among the specific features of intellectual deficiency can also be mentioned:

- *difficulty in receiving information* - due to the narrowing of the perceptual field, or problems in perceiving size, weight, shape, as colors are perceived more easily. This explains why some stimuli need to be more intense;

- *thinking is too little flexible and creative* - being too tributary to concrete. This means that any knowledge is taught to students with mild mental deficiency needs to be supported by real, real support, and its use for children must be clearly explained (Băban 2001);

- *the language* - is somewhat delayed, it is poor, limited, with few words existing in the passive vocabulary of the vocabulary but with less use in the current speech. In its turn, language is tributary to concrete, being made up of too few abstract concepts. Oral and written language disorders are common and resistant to correction compared with preschool children (Dughi, Ropota 2018). A possible explanation for this phenomenon is given by the lack of cognitive support that would allow for the conservation of acquired acquisitions through therapies followed ;

- *poor memory efficiency* - its lack of flexibility in the transfer of data from one unit to another, insufficient memory fidelity or high degree of suggestiveness, make these processes questionable;

- *difficulty in organizing and planning different activities* - students with mild mental deficiency encounter such difficulties, due to the poor structure of cognitive activities and, on the other hand, the difficulty of anticipating an event to occur, as well as to take a responsible decision in this regard;

- *affective immaturity* - is characterized by intense, chaotic, and sometimes even ambivalent feelings towards others, manifested by oscillations between feelings of sympathy and antipathy towards others. This may be one of the causes of poor social relationships (Atkinson, 2002).

Children with intellectual disabilities are people who are educated in special education in general, but with the help of specialists (including the support teacher) there are cases that can be integrated into mass school.

*Self-image and behavior in children with intellectual disabilities*

The structure and dynamics of self-image in those with intellectual disabilities has been the subject of careful study in the US and Western European countries when it comes to the question of school and socio-professional integration of these people, following the implementation of the principle of equal opportunities and promoting non-discriminatory access to services and structures for all members of the community (Buice, 2004).

In our country, unfortunately, the action of school integration of children with disabilities started without a sufficient assessment of the impact that such a measure would generate in an unprepared and reticent institutional environment, which could compromise the chances success of this approach (Zlate, 2000).

In principle, a pre-integration stage should be taken into account, on the one hand, the formation of minimum social skills in order to maintain a favorable school climate in the presence of pupils with intellectual disabilities too and, on the other hand, the initiation of some actions of mutual recognition that can alleviate the differences of inherent social perception. Additionally, counseling teachers and normal parents in the presence of school counselor and support teacher is another factor that is indispensable to increasing the chances of success of integration.

Before any concrete didactic activity, it is necessary to educate the self perception and the behavior of the child with intellectual disability. If he does not have a proper picture of his abilities and will alter the atmosphere of the school group through inappropriate behavior, no one will benefit from integration (Vereenooghe, 2018).

Four axes are involved in the formation of self-image: the cognitive axis, the affective-motivational axis, the behavioral-relational axis and the moral-value axis. If to the child the self-image is constituted from the outside to the inside and is due largely to the attitudes of adults towards the school and social behavior and performance, in puberty and adolescence, the process is reversed, going from inside to the outside (Buice, 2004).

In those with intellectual disabilities, all four axes develop inadequately and flawlessly, which is why the level of personal development of self-image is not attained. For this reason, the way in which teachers, parents and other members of the family react to the child's intellectual disability, in time, shapes and stabilizes a certain self-image. Perron (1969, apud Macsinga 2000) identifies two tendencies of confronting parents with the disability of their own child: either they impute the child's mental retardation (mother is usually "guilty"), or consider their own conduct as a reaction to their manifestations. It is very likely that parents who focus their attitudes and conduct on the disability of the child teach him to look at and define himself as a handicapped (Dolto, 2005).

Teachers unfamiliar with the specific of intellectual disability either devalorize the integrated student and place it in the category of compulsory tasks, or treat it with indulgence, but not differentiated, in accordance with its learning and conduct potential. If critical and repressive attitudes, motivated by the need for strict control of child behavior, induce him to fear and lack of initiative, overestimation and hypertolerance are not indicated, unjustified praises and non-punishment of inappropriate manifestations which have, over time, hypertrophy of the self. Keeping the student in a segregated institutional environment will only strengthen a self-image that will flagrantly contradict its real capabilities. On the other hand, the unassisted placement of the mental deficiency in a group of normal children will negatively affect both the way in which he will work and how he will perceive the other colleagues (Verza, 2000).

The results of various studies converge to the conclusion of the malfunctioning of the self-image to the mental deficient, accentuating either the state of inferiority and devaluation or the state of superiority and overestimation. The child with intellectual disability is lacking or very low the critical sense, the ability to self-examine objectively in relation to the social rules and values, as well as with their own interests.

Self-assessments are not based on essential criteria such as intelligence or social adaptability, but rough, directly measurable and comparable benchmarks such as muscle strength, school grades. Professor hierarchies impose on the student with intellectual disability classifications that he does not question. The need to be accepted and valued positively by other normal students often generates displaced, exaggerated behaviors that awaken the group's amusement. By focusing on this, the child will strengthen and amplify deviant behavior, and the punitive intervention of the teacher will only increase his popularity among colleagues (Florea and Surlea, 2005).

Feeling ignored and dismissed by colleagues, in the vast majority of situations, due to its low ability to be a good school mate or play partner, the child with intellectual disability acquires the conviction that only through behavioral eccentricities will it become interesting for others, who will persevere in such a relational disfavoring pattern.

*The cardinal axes* of the child's self-image of low-school intellectual disability evolve in the following way (Buice, 2004):

*The cognitive-actional axis* is marked by both a low interest in the actual knowledge of the other, as well as the lacunar and superficial perception of its character and intentions. If sometimes a child with mild intellectual disability can figure out in certain situations when he is preparing a hoax or "laughs" with him, the one with a higher degree of intellectual disability is incapable of discerning hidden intentions or more subtle implications of some certain reactions or suggestions. Self-perception depends strongly on affective mood and the opinions of others. The increased emotional laxity on the background of a young and fluctuating motivation leads to rapid passages from psychological comfort and self-confidence, to personal anxiety and disgust (Dumitrescu and Dumitrescu, 2005). The mentally deficient child should be taught to think positively because positive thinking creates positive feelings and leads to an active and comfortable adaptation to reality (Roman, 2018).

*The affective-motivational axis* is dominated by the high lability of emotions, but also by the needs. Satisfaction of a positive self-image and initiative in pursuing immediate interests are rapidly eroded and turned into counterparts as soon as they are apostrophe or face significant obstacles. Also, the affective disposition of the group or its motivations contaminates the present state of the child with intellectual disability (Weiss, Markowetz, Kiel 2018).

*The behavioral-relational axis* is very sensitive to the parameters of the environment. The child forms certain patterns of conduct and interaction as a result of the long-term relationship with certain adults, patterns that he tends to transfer uncritically and in relationships with other people. Particularly, the rigidity of addressing formulas and low preoccupation for adapting the relationship to the age and social position of the interlocutor (Crețu, 2001) is noted.

*The moral-value axis* remains at the piagetian level of heteronomy, from which derives the so-called moral realism, characterized by immutable dependence on norms and values imposed externally. However, the censorship of the supra-ego is easily corruptible by the concrete temptations that claim immediate satisfaction, which in the absence of an adult happens very quickly, without the momentary guilt of guilt. When the degree of discernment is profoundly impaired, the child with intellectual disability tends to associate the rule with the parent or educator and therefore elude them during their physical absence (Birch, 2000).



In terms of behavior, this remains closely related to the degree of self-image development and the functional level of other higher psychic processes (Bogatu, 2002).

### Hypothesis and objectives

The research started from the following working hypothesis: *It was assumed that, if a group of children with intellectual disabilities is subject to a game-based learning training, then they will make significantly greater progress compared to a group of children with intellectual disabilities who have not benefited from this training.*

From the general hypothesis, the following specific hypotheses are broken down:

**Hs1** - there are significant differences in school children in the number of attempts to perform a task, depending on the level of intelligence

**Hs2** - there are significant differences in school children in the number of mistakes in the task, depending on the level of intelligence

**Hs3** - school children with intellectual disabilities can progress in achieving a task as a result of didactic learning.

The goals were the followings:

- recording the number of trials required to perform a task;
- recording the number of errors made by children with intellectual disabilities in the task;
- identifying the progress made by school children with intellectual disabilities as a result of learning through the game.

### Sample taken into study

The sample taken into study was made up of two groups of children with intellectual disabilities:

- group 1 - 22 scholars with mild intellectual disabilities (QI ranging from 60 to 69)
- group 2 - 21 scholars with moderate intellectual disabilities (QI ranging from 50 to 59).

The level of disability was appreciated by the psychological test of nonverbal, global intelligence testing: Raven color

Twenty (20) children with intellectual disabilities participated in the training, of which 10 benefited from the intervention, and the other 10 represented the control group. The age ranges for these two subgroups are shown in Table 1 and figure 1.

**Table 1**  
**Values of central trend indicators for the training and control groups**

Group	Characteristics	Age average	Std. Dev.	Total subjects
1	Intervention group	7,12	0,23	10
2	Control group	7,24	0,31	10

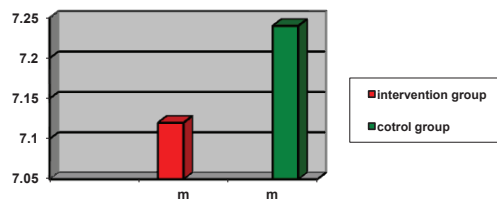


Figure 1 The average age for the two groups

## Methodology

### *The trial and error test*

Children were provided with cubes which had red and blue colored faces. There was an image in which the cubes were arranged to form an arrow. The task of the children was to build the arrow, fully respecting the pattern and colors. There were recorded the number of attempts the child needed to perform the task, as well as the number of errors.

### *The Raven colour test*

It is a test destined to show the global nonverbal intelligence coefficient.

### *Intervention program*

The intervention program consisted of choosing 12 didactic games to help recover children with intellectual disabilities.

## Results and discussions

**Hs1** - *there are significant differences in school children in the number of attempts to perform a task, depending on the level of intelligence.*

In Table 2 and Figure 2 are presented the indicators of the central values tendencies in the tests for carrying out the task.

**Table 2.** Values of central trend indicators at test level accomplishing a task in school children

attempts	Average	Std.dev.	N
<b>Group 1</b>	0,50	0,21	22
<b>Group 2</b>	7,25	2,36	21

Where: group 1 = children with mild intellectual disability  
group 2 = children with moderate disability

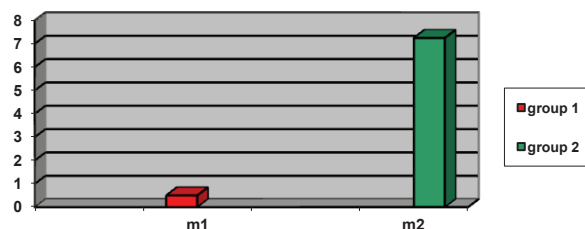


Figure 2. Values of central trend indicators at test level accomplishing a task in school children

As can be seen from the table and the graph, there are statistically significant differences between subjects in terms of the number of tests required to carry out a task, the t value being 16,024 at a significance threshold of  $p = 0$ , see Table 3

**Table 3.** Meaning of differences in level the number of attempts at small schools

Attempts	df	t	Sig
<b>Intergroup</b>	<b>1</b>	<b>16,024</b>	<b>0,00</b>
<b>Intragroup</b>	<b>41</b>		

It can be stated, based on the data presented in table, that the specific hypothesis Hs1 was confirmed by the results obtained by us.

**Hs2:** *there are significant differences in school children in the number of mistakes in the task, depending on the level of intelligence.*

Table 4 presents the values of central trend indicators, at the level of mistakes in achieving a task for school children.

**Table 4. Values of indicators of central trends in the level of errors in achieving a task in school children**

Erors	Average	Std.dev.	N
<b>Group 1</b>	0,02	0,29	22
<b>Group 2</b>	7,38	1,82	21

Where: group 1 = children with mild intellectual disability

group 2 = children with moderate disability

From the table, it is noted that there are significant differences between the two groups of subjects in terms of mistakes committed in carrying out a task, since the value of the test  $t = 18,450$  is significant for a significance threshold  $p = 0$  (see table 5).

**Table 5. Meaning of differences in level the number of errors in small schoolchildren**

Erors	df	t	Sig
<b>Intergroup</b>	<b>1</b>	<b>18,450</b>	<b>0,00</b>
<b>Intragroup</b>	<b>41</b>		

The specific Hs2 hypothesis was confirmed by our results.

**Hs3:** *There are significant differences in ice scratches and errors between mentally disabled children undergoing training and those who have not been subject to it.*

*Children of intellectual disability can progress in achieving a task as a result of learning through the game.*

Table 6 shows values of central trend indicators at the pretest and posttest groups, and Table 6.11 includes the significance of differences in the price and posttest groups.

**Table 6. Values of central trend indicators at the level of pretst and posttest groups**

		Average	Std.dev.	N
Intervention Group pretest-posttest	Attempts	7,6	2,27	10
	Erors	4,5	0,84	
Intervention Group pretest-posttest	Attempts	7,6	2,27	10
	Erors	3,6	0,84	
Control Group pretest-posttest	Attempts	7,2	1,47	10
	Erors	6,9	1,59	
Control Group pretest-posttest	Attempts	7,2	1,47	10
	Erors	6,7	1,82	

We will try to graphically chart the progress of the training intervention group compared to the non-training control group. This will make it easier to observe the progress made by the intervention group, where the introduction of the didactic games in learning led to a superior improvement in the children included in this group compared to their colleagues, although they had the same degree of intellectual disability. A more illustrative overview of the differences between the two groups in pretest and posttest assessments is shown in Figure 3.



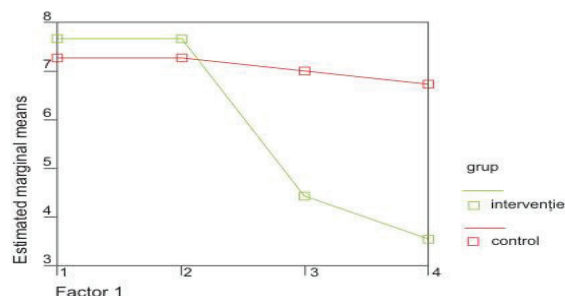


Figure 3. Differences between groups in pretest and post-test.

As can be seen from Table 6, there are significant differences in the pupils in the intervention group compared to those in the pretest - posttest group, the value of the test  $F(1,18) = 404,116$ , significantly at a significance threshold  $p = 0$ .

Table 7 shows the significance of group differences in pretest-posttest.

**Table 7. Significance of differences in twogroups in pretest and posttest**

	df	F	Sig
<b>Intergroup</b>	<b>1</b>	<b>404,116</b>	<b>0,00</b>
<b>Intragroup</b>	<b>18</b>		

The specific Hs3 hypothesis formulated by us at the beginning of the research was confirmed by the practical results obtained

### Conclusions

The didactic game is a complex form of activity that solves one or more didactic tasks by combining the techniques of accomplishing these tasks with the game element. We use the game to stimulate children to solve a teaching task in a more attractive form, knowing that learning involving the game becomes more enjoyable and refreshing. Essentially, from our point of view, it is that the game creates favorable conditions for practicing skills and abilities in the form of pleasant and attractive activities, in a relaxed, warm and encouraging atmosphere for children with intellectual disabilities.

The sample studied consisted of 43 children with intellectual disabilities divided into two groups: children with mild intellectual disabilities (QI between 60 and 69) and children with moderate mental disabilities (QI between 50 and 59). The samples were applied both individually and collectively. The applied tests were as follows: - Raven for determining the level of intelligence, - Testing and errors for problem solving abilities by model.

After the statistical processing of the obtained data, the following aspects were highlighted:

- results from inferential processing of data confess these hypotheses, there are significant differences in the number of attempts and the number of errors in school children in carrying out tasks.
- verification of hypothesis no. 3 highlights the role of the didactic game in learning, the results obtained showing the efficiency of the intervention program, the differences between the intervention group and the control group being significant.

Thus, we can conclude that the intervention program structured on different types of games has a high efficiency, which determines the necessity of introducing some gambling activities that will help children with intellectual disabilities to express themselves more easily in an appropriate framework, from an emotional and educational point of view.

**Acknowledgement:** We hereby state that the subjects involved in our research were informed about the voluntary character of participation in this research, about the understanding of information and of that fact that withdrawal from research is possible at any time without negative consequences upon the participant. The research complied with all ethical research standards, the research participants/participants' guardians giving their consent to participate in the research.

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