

## CREATIVITY AND STEP BY STEP PEDAGOGY

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### **Abstract:**

*This paper represents an establishing study regarding the identification of the pupils` creative potential on the following dimensions: fluidity, originality, elaboration, abstracting and opening. The study was realized within a class of 31 pupils, aged between 7 and 8 years old, 1<sup>st</sup> graders, the Step by Step alternative. The research method used was The Creative Thinking Test – by E.P. Torrance. After having analyzed the obtained results, we suggest a few working techniques with the pupils that would lead to the development of their creative availabilities.*

**Keywords:** *creativity, Step by Step pedagogy, creative availability.*

### **Introduction:**

The rapid changes that occur nowadays, all over the world make us understand how important it is to permanently fuel the children’s need of learning and knowledge. No matter where they live, throughout their whole lives, children will have to face various social, political, environmental, scientific, technologic and industrial changes. In order to prepare children to be receptive and to permanently get informed within democratic societies Step by Step creates the foundation of attitudes, knowledge and abilities that the children will need in the rapid change of future times. The program is conceived according to the respect towards the needs that are specific to each country and its cultural traditions, respecting the human rights and the children’s rights.

Even though they were regarded with reticence at first, these initiatives have come to be appreciated by most of those involved in the educational process. If until yesterday, the Romanian society avoided to remind the already existing educational alternatives, today we notice a certain preference for these systems, which isn’t at all negligible for those interested to introduce change in studying.

The educational alternatives initiated and organized with the agreement of the Ministry of National Education, especially the Step by Step educational alternative admit, treasure and encourage the development of necessary abilities to cross the way to schooling success, road that starts from preparatory classes.

### **Step by Step pedagogy and creativity**

In Romania the Step by Step program started in 1994 under the name "Head Start" at the initiative of the Soros Foundation for an Open Society and in 1995 took the name Step by Step. Starting with March 1998 the program is continued by the "Step by Step Center for Education and Professional Development" offering new methods of educating future generations, in the view of an active and responsible participation within open societies. The Step by Step program offers solutions for educating children from elementary school thus continuing the philosophy and the concepts that are specific to the Step by Step program for kindergarten children: a curriculum that foresees the individualization of the instruction but also activities for the whole class, group activities, activities developed in especially designed activity centers and the participation of the family to the educational process. At first sight these characteristics coincide with those of the traditional system of teaching, both the primary and the preschool one.

The difference comes from the way the whole educational process is planned, organized and developed. The makers of the program are constituted into a team of educators, two educators/primary teachers, the headmaster of the school, parents and volunteers.

The Step by Step program promotes the organization of the education centered on the child, respecting his individual rhythm and his developing stages. The children are encouraged to express their own views and opinions regarding the surrounding reality, being prepared to acquire qualities such as mutual respect, honesty, civic duty, seriousness and responsibility. These character features are formed through daily relationship with children.

The Step by Step program creates the ground of attitudes, knowledge and abilities that children will need in the rapid change of future times. The program is conceived in the spirit of the respect towards the needs specific to every country and cultural traditions.

The Step by Step educational alternative respects the national curriculum, the national standards, it is adapted to the local culture and at the

same time, it integrates the standards and the best international practice in the educational field.

The long term aim of the Step by Step program is the consolidation of lifetime learning abilities. As educators we have the responsibility to lead the students in consolidating some long time learning abilities. These abilities can be identified by the following five characteristics:

*I. Creativity*

The desire to take frequent risks  
Spontaneity, originality  
The manifestation of the desire to explore, the sense of humor  
Analytical capacity, flexibility

*II. Productivity*

Organizational spirit, the ability to make estimations  
Consequence, concentration  
Perseverance, motivation  
Initiative, analytical ability

*III. Curiosity*

The manifestation of the desire to make experimental explorations  
The desire to know the nature of the abstract thinking  
The analytical ability, the ability to make estimations

*IV. Cooperation*

Wisdom, positive thinking  
The feeling of belonging to a group responsibility

*V. Empathy*

Tolerance, understanding  
The desire to share opinions, patience

The program promotes the education centered on the child, the teaching oriented on the child's needs and interests, the learning organized in activity centers, the involvement of the families and the community in the education of children, the respect and the appreciation of the human diversity, the sustaining of the inclusion of disadvantaged groups. The educational alternative Step by Step has the mission to develop in each child the ability to be creative, to form a critical thinking, to make options and to have initiative, to define and solve a problem, to communicate easily with his peers to understand them and to negotiate.

The child is provided with appropriate developing practices according to his age. Learning is produced to a certain extent by individual discovery and also following the child's natural path, thus the personal ways to proceed to knowledge and to the developing of abilities are encouraged.

The team of educators has to offer plenty and efficient learning materials to the children encouraging the games and the activity in centers for which they make a free option. The centers may vary from one class to the other the main one being: communication (reading-writing), constructions, math, art, science, role play. The activity on centers allows children to work relying on their own interests and abilities, thus realizing the individualization of the instruction.

The global aims of the Step by Step program are:

- 1) Developing a constant concern for education
- 2) Creating an educational environment based on mutual respect and democratic principles
- 3) Assuring the continuity of education and of the applied methods
- 4) The assimilation of some intellectual, artistic, ethical and practical abilities by the students which will help them to participate successfully at the progress of a democratic society.

The concern, the communication, the relationships, the community of the students assures a solid base on which children can build capacities and competences.

The Step by Step educational alternative for primary and pre-school teaching is destined to the organization of the didactic syllabus according to children. The child stands at the origin of the building of this syllabus. The children's knowledge determines the school programs and that knowledge has to be first of all searched in the concrete manifestation of the child. Within a class that is organized on the principle of the development, the children's needs and interests help to establish the content of learning. Besides these, a very important role plays the knowing of the scientific theories about the development of the child and the scientific patterns about normative growth.

What happens in the class oriented on the child's needs is part of real life. The knowledge is discovered mostly by the child through his own efforts. Education is regarded as a process, learning being realized as a spiral that keeps expanding. Pupils are involved in finding solutions to problems and they take part in elaborating projects. The basis of the Step by Step program lies in recognizing and respecting the interests, the individual talents, the personal learning styles and the cultural values of all the children.

Teaching the child how to learn rather than what to learn, to support him in order to develop his own potential are some of its defining characteristics.

The Step by Step program promotes the individualization of the teaching-learning process respecting the intellectual capacities of every child and his effort to assimilate knowledge and to form abilities. The primary teachers that share this point of view maintain the child in the centre of the learning process. They try to create environments that would reflect this concern, opening the path for the children to explore the surrounding world, stimulating them to ask questions and to find answers, helping them to understand the complexity of the world.

The Step by Step classes are an environment of exploration, investigation, efficient dialogue and efficient solutions to group problems. When the learning environment in which the pupils spend most of their time is organized in such a way that it encourages the interaction student-student, where cooperation is treasured, the themes and the materials are synthesized and the freedom of thought and expression is guaranteed, children become active and willing to work in such a manner that they are able to respond to the current intellectual challenges. This is the way schooling environments based on the development of the child should look like.

Within this context creativity should be regarded from two perspectives: as oriented towards the creative product or to the creative process. Considering the specific of the education in the Step by Step program and not only this, it is obvious that the main orientation is made towards the creative process. Here we have to emphasize the fact that we talk about the expressive level of creativity because of the age segment from the primary cycle. Thus, the cultivation of the attitudes associated to the creativity not only to the skills, becomes important. The educational effort will be oriented to the obtaining, as a product, of some internal modifications within the pupils' personalities.

The development of the creativity supposes the realization of two complementary pedagogical actions (Roman, A., Dughi, T., 2008, pp.56-57):

- a) The elaboration of a model of educating creativity
- b) The projection of a creative learning

The general objective would be the formation and the development of a personality capable of engaging creativity on a cultural, professional and ethical level.

The specific objectives would be: the stimulation of the creative thinking by the notification and the finding of solution to certain problem

situations more and more complex; the development of analysis, synthesis, generalization, abstracting; critical evaluation; activating the necessary pedagogical methodologies for cultivating creativity.

The definite objectives would be the stimulating of the flexibility of thoughts; the cultivation of divergent thinking; the development of the creative imagination; the utilization of special skills.

The projection of the creative learning involves the anticipation of some managerial strategies that can be applied in time and space by the classification of the aim of the creative learning at the level of the interaction existing between them: the intellectual promptness – the school performance – the permanent reorganization of the teaching-learning-evaluation activity.

On the condition of the creative learning the teachers have the following duties:

- to individualize each didactic sequence through different approval procedures (to awake the feeling of success), of encouraging spontaneity, of stimulation, of blaming shallowness.

- to create the best affective atmosphere necessary for the complete canceling of the blocking factors (fear, tension, fright, imitation)

- the full psychological utilization of the teacher-student communication

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So if the pedagogical creativity asks the individual, on the basis of a permanent self-perfecting to be creative from the point of view of the creative product, to be engaged into a creative process oriented towards the realization and the solving of the problem situations – at the level of divergent thinking, to combine, in the best way possible, in his personality both the creative attitudes and the creative skills.

### **The aim and the objectives of the study**

The aim of this study was the improvement of the approach of creative education for the students in a Step by Step class to acquire the behavioral modifications with high adaptable value.

We have set the following objectives:

- identifying the pupils creative potential as: fluidity, originality, elaboration, abstracting, opening;

- identifying some work techniques with the pupils that would lead to the development of creative availabilities

The study was carried out for a class with 31 children aged between 7 and 8 years old who are in the 1<sup>st</sup> grade in the Step by Step alternative.

### **Instruments that have been used**

The instrument used within this study was the Test of creative thinking – E.P. Torrance. Torrance's battery of tests is by far the most widely used for school children, although there are studies that disagree for instance with its validity to construct. The longitudinal data support the idea of long term stability of the performances of divergent thinking in mid childhood and throughout teenage years. On the other hand there are studies that highlight the influence of the context of the testing conditions and of the motivational factors on performances on T.T. CT.

The objective of the test is the evaluation of the creativity process through which we become sensitive to problems, to what is missing, to the gaps in knowledge to the absence of some elements, to disharmonies, through which we identify difficulty, we find solutions or we formulate hypothesis about deficiencies, through which we test these hypothesis and maybe we modify them and we test these modifications and eventually through which we communicate the results.

The test was standardized again for the population of Romania between 2007-2008 onto a number of 1768 protocols resulting an application manual of T.T.C.T. that becomes a valid target in using these tests in Romania (Iliescu, D., Dincă, M., Panc, I., 2008)

For this study we have used several figural probes A that include the following types of tasks:

- Make up a drawing using an old piece of paper that you can detach afterwards and that you can stick onto a white sheet of paper
- Draw pictures all around it to make it look beautiful, give a funny name to the drawing and add a story (add different elements to make a drawing and an interesting story, give an original and funny title to the drawing and to the story;
- Finishing some incomplete drawings and adding interesting ideas, developing a title;
- Executing some drawings starting from two parallel lines. The interpretation of the results is made by the accounting of the success according to the following criteria;
  - **FL** (fluidity) considered as a subject's skill to produce a great number of ideas;

- **O** (originality) considered as the skill to produce ideas that are further from what is common, obvious, ordinary, aspects that have already been established;

- **EL** (elaboration) considered to represent the subject's skill to develop, expand and enrich his ideas, the number of extra details used when elaborating answers;

- **A** (semantic abstracting) – considered as being the ability to identify a title with a degree as abstract as possible;

- **R** (resistance to the premature closing of images) – considered as being the ability to realize open images;

### Presenting and analyzing the data

The analysis of the scores obtained by the students show the fact that the best represented dimension is fluidity. It is obvious that the pupils evaluated have a good ability of producing new ideas but the degree of their originality is relatively low. The degree of elaborating figures has the best results, many of the pupils having paid attention to details. The lowest results registered are in the Abstracting of the titles dimension. This fact shows a reduced ability to verbalize at an abstract level, pupils making only concrete associations. Their age, the degree to which the language was appropriated are conditions that generate this future.

*Table nr.1 with the standard scores obtained by the students ( F – fluidity O – originality E the degree of elaboration A – semantic abstracting R – resistance to closing)*

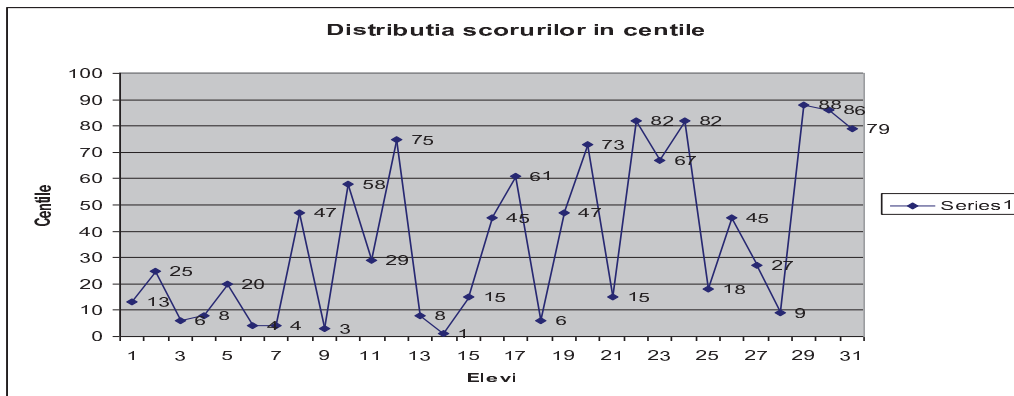
	F	O	E	A	R	mediu m standard score
BP	119	91	126	83	0	84
TS	116	107	154	0	88	93
FE	81	89	135	0	80	77
MA	116	84	126	0	84	82
CA	103	86	160	0	91	88
PD	81	91	126	0	72	74
HB	81	81	135	0	72	74
DA	126	112	160	0	95	99
CG	81	88	116	0	80	73
BD	116	110	145	83	84	107
BC	106	98	116	83	84	97
ID	146	194	154	83	84	116
VD	103	100	126	0	84	83
GM	75	76	107	0	84	69
HV	81	81	97	83	88	86



MC	131	110	154	0	99	99
CM	146	145	154	0	91	107
GD	96	95	116	0	84	78
TA	93	105	145	87	76	101
MA	146	100	126	93	88	111
LD	116	88	135	0	103	85
FD	119	100	160	87	106	114
TI	96	93	160	90	99	108
PA	146	114	154	83	99	119
SG	70	91	135	0	95	78
BI	146	110	145	0	88	98
GI	134	110	145	0	91	96
SB	116	91	116	0	84	82
CV	121	124	154	87	117	119
CM	94	110	160	84	124	114
TE	116	169	145	87	88	111
Media	11	10	13	35.	87.	94.25
	0.2258	4.6129	8.2903	90323	16129	806
	F	O	E	A	R	mediu m standard score

### Average standard score

As far as the average medium standard scores are concerned these show an average level of creativity for most of the pupils, still existing 7 pupils with scores under 80. In these cases the creative potential is very low, these children not being accustomed with this type of tasks and needing a more intense stimulation in developing creative characteristics. Very high scores that indicate a good creative ability have also been registered, these children do not only produce many ideas they also have high scores both for originality and for the elaboration level.



*Graphic nr.1 – the distribution of scores for the Creativity index in percentiles*

The calculation of the Creativity index in percentiles reflects the level of creativity these pupils have (graphic nr.1). It is shown that only 30% of the pupils surpass the value of 50. On the other hand, 40% of them are situated under the 25 percentiles which proves a very low level of creativity. This distribution involves, at a pedagogical level, the distribution of the educative intentions in two directions.

Using the children's high creative potential when they find themselves involved in group activities and the other being the stimulation of the creative potential for those with very low scores, direction that has to be the more dominant one in this case.

Starting from the same thing, from a topic given in class or even from a game, pupils have different approaches, different ideas, the teacher being the one who studies their reactions, thus discovering towards what each one is heading to and at the same time his/her personality that has to be formed and shaped accordingly. The teacher has the duty and the obligation to encourage, furthermore, the development of the children's abilities towards the suitable fields.

### **Recommendations**

When it comes to teaching any kind of subject practical methods and exercises can be applied in order to stimulate the children's creativity. The methods and the exercises themselves are not spectacular but their result may be.

Even in more abrasive areas, like math, we can talk about creativity as this can be stimulated through different exercises like the following (Kelemen, Dughi, 2014, p.57)

- Proposing different calculation exercises so as according to their level of difficulty they would represent a challenge for the pupil's intellectual resources;

- Using formulations meant to make the pupil accustomed with the mathematical terms in an interactive way that would stimulate his imagination (the least number of .....figures is? On which number is the biggest.....?)

- Making up problems is a way that allows pupils to use their vocabulary, to use and to study thoroughly the knowledge already acquired and which stimulates them intellectually by the selection of dates, the formulating of questions, ways of finding solutions and validating the result.

- The mathematical game, a pleasant way of doing exercises. The most common ones are the mathematical squares, reconstructions, true or false, etc.

Here are a number of games which, without needing too much time, too many materials or special designed spaces can make a contribution in the development of the creativity of the little children (Dan Ioana in *Creativitatea - perspective psihologice și pedagogice*, 2014, Kelemen, Dughi – coord., pp.99-102)

*What would you do if you were him?*

Sometimes when the pressure of identifying the solutions is not a pressing on our shoulders, we have better and more imaginative ideas. This game takes this into account. The child will be asked to choose a person (it can be a friend, a parent, a teacher, a character from a story, etc) for whom they have prepared a secret challenge. After the child had chosen the person, the challenge has to be revealed: (Ex. What would he do... if someone hurt his feelings? How would he behave if he were you teacher ...?)

*Find a use for ...!*

An object is chosen at random (for ex. A pencil, a pen, a mug, a stone, etc) and children are asked to find as many uses as possible for that object. After the children had come up with the first obvious ideas you have to insist with different kinds of questions (ex. How could you use that object on a plane? Underwater? In a trip? etc) These questions might help to promote some really original ideas.

Observation: All the ideas will be positively appreciated, so there are no wrong answers.

*Odd Connections*

Use some notes to write down words that define objects or beings (egg, elephant, child, cube, tractor, etc) and afterwards put them into a little bag. Once at a time each child will take out two pieces of paper and he/she is challenged to find as many connections as possible between the two objects.

Teachers have to stimulate children to identify other connection than the obvious ones. A variation of this game would be to use action expression instead of words that define objects (Simister, C. J., 2011, pag.112).

*Recycle!*

The leader of the game uses the expression “In the bin I have found ... (ex. An out-of-order phone, a jug, a jar, etc)”. Then he names a child that should answer like this: “it could be used for ...). The players will then

change roles and the game is repeated. This game is best played if its rhythm is alert (Simister, C. J., 2011, pag.112).

#### *Chained words*

A word is chosen at random and then each player says a word that is somehow connected with the first word. For example you can start from the word “grass”, the first player could say the word “green”, the second one “leaf” and so on. The player is out of the game if he/she says a word that has no connection whatsoever with the one said previously or repeats a word that had already been said. The game must be played fast.

#### *Question – Answer*

A word is chosen and the children will have to ask a question to which the answer would be the initial word. Questions will be considered as correct only if they lead exactly to that answer.

#### *Search for the words*

A child chooses a ‘key’ word that he writes on a piece of paper together with three other words tightly connected with the given word. Then he gives the piece of paper to another child. This one reads the words in silence, to himself without showing it to the other children, then he has to describe the ‘key’ word without using the words on the note. Example: key word ‘school’ – associated words: homework, pupil, study.

#### *The ten variants*

A task is chosen like for example “Let’s catch a dragon!”, “Let’s teach an elephant how to write” etc. Children have to find ten ways to solve out the given task. The more absurd the tasks are, the more attractive they will be for the children (Simister, C J, 2011, pag.113)

#### *Change the ending*

A story that is very known by the children is chosen and it is told again until its climax. Children are then asked to change the ending, creating it and making it as interesting and as different as the original variant as possible. A variant of this game is continuing the story beyond its ending: “What happens after...?”

#### *Name the doll*

The task of the game is finding as many names as possible for the boy/girl doll that would begin with a certain letter. (Ex: “Say as many names as possible that would start with A”)

#### *What would happen if ...?*

Children are asked to indicate different consequences of special happenings (Ex: "What would happen if the sun was gone?" "What would happen if we didn't have any water?")

*What does it look like?*

An ordinary object is presented to the class and without any other explanations children are asked to name other objects or beings that look like it. (Ex: A thick rope set in a curling position is shown to the pupils and the possible answers could be "it looks like a snake, a river, a train, a cat's tail")

*"Surprise" paintings*

The children's first task would be to entirely cover a white sheet of paper with spots of different colors and sizes. After completing this task they are asked to look carefully at their drawing and using a marker to outline the spots so as it would become a figurative composition. A variant of this game would be to give the same drawing to all the children and then compare their results.

*What is similar to?*

A shape is chosen – it can be a circle (a square, a rectangular, a triangle or anything else). The children are asked to write the names of as many round shapes as possible in a period of time that had previously been announced. These shapes can be anything, the only important thing is that they are round. After the time has expired the answers are read and then the second task is grouping the examples into categories and counting these categories. The creativity of the thinking is even bigger in this case because a bigger number of categories are obtained by grouping them.

*The painting of geometrical figures*

Each child receives a sheet of white paper and a number of geometrical figures of different sizes and colors that were cut out of carton. The children must stick all the geometrical figures to obtain a very creative work of art. Both reality inspired and fantasy creations must be accepted.

*Different worlds*

Three words are chosen at random without any obvious connections whatsoever between them. Children are asked to create a short text in which to appear all the words, being warned that in the text the sentences should be chained not only listed.

## Conclusions

The teacher is the one who helps the students by having a large range of methods and techniques to stimulate and develop creativity. He/she has to pay a lot of effort to help students discover the artistic fields and not only these, which are suitable for them. The teacher is the one who analysis the students daily in order to discover and understand his concerns, his style, his own way of approaching different themes.

The education oriented towards creativity involves creating favorable conditions but the most important thing is to encourage children to work and think independently, to elaborate their own projects and the teachers to let go of the idea that in school all activities should be strictly led and conducted only by themselves.

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