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Training creativity in preschool education

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Abstract. *Even though creativity was, for a long time, seen as a genetically inherited trait, latest research shows that, through education, one can cultivate their potential and encourage creative behavior. By creative teaching, using techniques that promote and challenge thinking, innovation can be stimulated and exercised, intellectually, so well as logically, rationally and on a motivational level. The child's motivation, attitude, and character go through significant changes as they grow up and can, thus, be modelled through adequate education, as long as this process is started from a young age and is sustained. The main condition that comes into terms for encouraging creative thinking is to ensure the right environment, one suited for the child's needs, that can sustain healthy and positive emotional expression, along with understanding and responsibility. One should also set price on constant stimulation of the child's brain, while challenging the little one to also bring his own contribution, make things original, in their own way. For most cases, the educator becomes the student's ideal, their first adult models; and so, if teachers are creative, they will also have the ability to positively stimulate and influence the pupils' creativity in thinking, with little effort. Children will look up to their teacher's set of values, those that are praised and encouraged and take from that to themselves and the way they choose to grow up.*

Keywords: 'creativity', 'creative education', 'creative teaching', 'creative thinking', 'principles', 'motivation.

Introduction

Creativity is recognized as one of the mandatory conditions in almost all fields of knowledge, be them consecrated artistic fields, such as painting, music, literature, or new creative approaches to sports and science. For example, in Information Technology, creativity is a must-have in building software, applications and computer programs.

If we are to go further than that, we can state that every field of knowledge does demand one's creativity in order to develop and grow, with innovative ideas and concepts.

Creativity development starts at a young age and, in this sense, preschool curriculum elaborates on distinct stages of training creativity, for each level (starting from 3 to 6 years old). Thus, by engaging and stimulating creative potential, by the time the pupil finishes preschool, they will have already learned and gotten used to *creative* habits and behavior, such as: creativity in visual arts, music, hand crafts, creativity in conversation and speaking, rhythmical sense, affinity for singing, motion creativity through dance and so on.

Developing creativity at preschoolers can only be done by directly involving tutors and educators in the process, as they are the ones that can

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facilitate the right contexts, learning environment, and resources necessary, as well as make good use of existing potential in children.

Terminological approaches to creativity

In order to define creativity, we must look at the psychological approach, that which looks at the concept from a **scientific¹ perspective**.

Studies on creativity date back over 70 years ago. Most researchers claimed that the first papers are those of J. P. Guilford², written in the 20th century. Guilford suggests there are two distinct types of thinking patterns: convergent (‘algorithmic thinking, which is self-sufficient, where objective data is worked with, for problem solving’) and divergent (‘characterized by flexibility, flow of thought, originality’)³.

In the case of a Pedagogy course, for example, one *convergent* answer to the discussion ‘Fundamental Principles in Pedagogy’ could be to focus on implementing these in didactical activities. One *divergent* answer could generate different possible scenarios in which said principles are implemented punctually, but with different variations.

Creativity can be defined as a variety of human traits, best reflected through one’s intelligence, inclinations and temper, aptitudes that underpin the creative process. This creative process is reflected by the underlying potential for each individual, that which everyone possesses, characterized by its educability and ability to continuously grow, develop and create new things, relevant at an individual or even social level⁴.

Etymologically, the term ‘creativity’ roots from the Latin ‘creare’, meaning to ‘sire’, ‘forge’, ‘give birth to’.

In the Praxeology Pedagogical Dictionary⁵, creativity in education is defined as a ‘unique, elaborate phenomenon, that is interdisciplinary, multidimensional and inter-determined, and that engages one’s personality and potential as a whole, in associating and combining, in new ways, preexisting variables, for making up new ideas, solving problems and manifesting creative behavior.

Pedagogical creativity vises the uniqueness of each individual situation (different students, different home environments, particular knowledge, various learning experiences etc.). For this very reason, Pedagogy avoids writing A-Z conceptual instructions to the educator, on how they

¹ Allport, G., *Structura și dezvoltarea personalității*, București: Editura Didactică și Pedagogică, 1981.

² Guilford, J. P., *The nature of human intelligence*, New-York, Mc Graw-Hill, 1967.

³ Radu, I. (coord.), *Introducere în psihologia contemporană*, Editura Sincron, Cluj, 1991, p.190

⁴ Jianu, A., Creativitatea - manifestare fascinantă a personalității umane, In: *Creativitatea și dezvoltarea personală: dimensiuni psihologice și filozofice*. Ediția a-XI-a. Vol. 1, 22-23 octombrie 2020. Iași: Performantica, 2020.

⁵ Bocoș, M. (coord.), *Dicționar praxiologic de pedagogie*. Pitești: Ed. Paralela 45, 2016, p.264.

should teach their pupils. That is because reality would not succeed in replicating the theoretical array, and any attempts to objectively trace the creative act, with one specific, one-of-a-kind definition, are rather difficult, if not impossible. Creativity, through its own nature, is unique and spontaneous.

Examples regarding the qualities a teacher must meet in order to successfully project and plan efficient didactic activities, that harness one's ability to constantly renew, from an educational perspective, are set by pedagogical creativity.⁶

Creativity is best defined as the behavior resulted from a unique association of individual traits, cognitive abilities and variables of the social context.⁷

The variety of definitions given to this term moreover highlights the interest given to this applicative endeavor which, in psychology, is approached both as a psychological process and a positive human quality. From all these definitions attributed, we could summarize the inclination towards the product of creativity - one which has social value. Appreciation of a product of creativity presumes fulfilling certain criteria.

By summarizing multiple authors' contribution to the study of creativity, Roco, M. lists these qualities that the vast process of the creative act implies⁸:

- Productivity that reflects the high number of new ideas, solutions, specialized written works, material or spiritual goods;
- Utility regarding the results, that should come to use throughout the endeavor;
- Efficiency, regarding the finances of the whole performance, yield obtained from using the goods obtained;
- Value of the products resulted from the creative enterprise, as well as their scholar and practical importance, recognition and respect gained, on a social level;
- Ingenuity regarding elegance and efficacy in using the proper methods to cope with the entire process;
- Novelty, referring to the distance in time in between works, ideas;
- Originality, estimated by the rarity of the ideas and works, as unique are considered those that are less frequent and, thus, more valuable⁹.

⁶ Cristea, S., *Dicționar de pedagogie*. București: Grupul Litera-Litera Internațional, 2000.

⁷ Amabile, T. (1998). How to kill creativity. Harvard Business Review. Disponibilă la <https://hbr.org/1998/09/how-to-kill-creativity>, accessed 01. 09. 2021.

⁸ Popescu, G., *Psihologia creativității*, Ed. Fundației România de Măine, București, 2007.

⁹ Roco, M., *Creativitate și inteligență emoțională*, Iași: Ed. Polirom, 2004.

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Further on, we shall selectively present more details on listing qualities linked to the creative process:

- Originality, as reflected through the unique character and rarity of the product obtained – is one way to measure social utility of the creative product;
- Novelty, referring to the distance in time in between creative works or ideas. This is measured either in relation to the previous social experience¹⁰ or with one’s life experience and refers to the occurrence, at a certain time of one product, in relation to previously existing (similar) products. We could also add that new products can come up (new in time, namely), but these can lack originality and innovation. innovation¹¹.
- Utility is looked at through inherent qualities of the creative product, and is valued as being useful or not for society, satisfying social needs or not;
- Efficiency of the creative product can be determined with the help of the economic potential of said product, measured by evaluating it from a financial perspective, in a particular market.

Another valuable aspect in the assessment of creativity is the quality of the products made, this trait is highlighted by the intrinsic qualities of the product, the social utility of the product created, the efficiency, the usefulness of the products, ideas as well as new and original solutions.

A product can be considered valuable by society, by a certain group or even by a single person. Children's creativity can also be examined in terms of products that are the result of the creative process.

In the case of creativity products made by children, the emphasis is on the fundamental form of creativity levels, on expressive creativity, which is manifested in spontaneous behavior in communication, in the aesthetic field, etc.¹²

Contributing factors to creativity development

J.P. Guilford¹³ has traced a few contributing factors that together make up the creative capability.

- ✓ Sensibility towards problems;
- ✓ Fluidity;
- ✓ Flexibility;

¹⁰ Bocioaga, L., Creativitatea, Citit la: *Creativitatea* (slideshare.net), 2012

^{11,13} Vlad, A., *Rolul creativității în redactarea compunerilor școlare* (disertație de master), Universitatea „1 decembrie 1918”, Alba Iulia, 2014, Citită la: MINISTERUL EDUCAȚIEI NAȚIONALE (ispef.biz).

¹² Guilford, J. P., *The nature of human intelligence*, New-York, Mc Graw-Hill, 1967.

- ✓ Originality;
- ✓ The ability to elaborate and redefine.

Guilford also highlights determining influences to each factor listed.

Problem sensitivity presupposes the ability to recognize the problems in the solution of which we must use creative processes. Fluency is of several types - verbal, ideational, associative or expressive and consists in the promptness and speed with which we manage to discuss solutions. Some people may take us by surprise with the number of ideas they have or the unique ways they propose to solve a problem.

Flexibility is the quick and compliant reconfiguration of knowledge. It can be classified into spontaneous (the ability to be flexible at any time, even if not required) and adaptive (the ability to be flexible when needed, such as in problem solving).

Pânișoară¹⁴ highlights the role of flexibility through key concepts of the modern school as follows: adaptation, dynamics, transformation. Flexibility, for teachers, becomes a great asset given the variety of confrontations at the social level, so that flexibility has become a major social principle.

According to Chaos Theory¹⁵, any element of the system, however small and insignificant it may seem, can influence the whole process at a certain time and under the auspices of certain conditions¹⁶. Flexibility is a sure way to the success of the modern teacher. If one method applied does not work, we can try again.

Roșca¹⁷ considers flexibility to be the main cognitive component of creativity. The opposite is cognitive inertia / rigidity, which represents the existence of stereotypes in thinking. Originality is a person's ability to provide unique, unexpected answers. This can be evaluated either objectively, through statistical processing, or subjectively, by evaluators.

Bejat¹⁸ says that originality is 'the most specific feature of creative thinking,' admitting that it is restricted by flexibility and relieved of fluency.

The elaboration is in fact the action of offering some unusual, very detailed solutions.

To redefine is the ability to use things designed to be used in unusual ways. Specialized literature talks about a range of non-intellectual factors that take part in creativity, such as motivation and affectivity.

¹⁴ Pânișoară, I. O., *Profesorul de succes. 59 de principii de pedagogie practică*. Iași: Ed. Polirom, 2009.

¹⁵ Cutright, M., *Chaos Theory & Higher Education: Leadership, Planning & Polic.*, New York: Peter Lang, 2001

¹⁶ Pânișoară, I. O., *Comunicarea eficientă*, Iași: Ed. Polirom, 2015, p.64.

¹⁷ Roșca, A., *Creativitate generală și specifică*, București: Editura Academiei, 1981.

¹⁸ Bejat, M., *Talent, inteligență, creativitate*, București: Editura Științifică, 1971.

Both extrinsic and intrinsic motivation are strongly utilized in the process of creation. Sometimes, what pushes the creative effort to continue is extrinsic to the creative process (awards, distinctions, recognition etc.) - this is called extrinsic motivation. Usually, however, the creative effort is intrinsically motivated, expressed by the desire to research, to accumulate knowledge, to formulate new ideas. Intrinsic motivation has a fundamental role in creativity, but this does not exclude the existence of external motivation in the act of creation.

Creativity requires the right mix between knowledge – in one’s fields of interest – and a particular set of skills, that may be:

- Approach based on knowledge and perception, facilitating problem solving through use of innovative methods;
- Hard work and perseverance, working independently, with self-discipline;
- Social skills, as well as tolerance to critique, while still embracing constructive commentaries;
- Affinity for that certain task one must accomplish, that would grant internal satisfaction once the load of work has been successfully finished.

The principle of inherent motivation is considered to be one of the core factors around which one articulates their componential model. Amabile¹⁹ suggested three main criteria that condition creativity in a field of knowledge:

- a) Specific set of skills, particular to that domain – these being the basis when it comes to the subject’s creative performance. But certain innate creative skills, such as talent, information and skills specific to the field, should not be left out. These field-specific skills are closely related to cognitive abilities, innate perceptual and motor skills, formal and informal education.
- b) Creative thinking and work skills - certain work styles, cognitively favorable and personality traits (nonconformism, independence, high risk-taking ability) offer individuals the opportunity to value their skills in various ways. Creative thinking includes knowledge of the heuristic processes of producing something new. A creative work style requires the ability to concentrate one’s efforts and attention for long periods of time, the inclination towards perfectionism, the ability to give up ideas that are not productive, the courage to face difficulties.
- c) Intrinsic motivation is the energy that sets creative activity in motion. Intrinsic motivation can be different, depending on the task, the

¹⁹ Amabile, T. (1998). How to kill creativity. Harvard Business Review. Disponibilă la <https://hbr.org/1998/09/how-to-kill-creativity>, 1998.

individual's interest in the task or the social context. Motivation for the field could consist of proactive attitude regarding that particular domain, favorable perception of one's motivation to support the purpose and depends on the initial level of intrinsic motivation for the field, the presence or absence of extrinsic constraints, the individual's ability to minimize external constraints.²⁰

Creativity is strongly influenced by curiosity, interest, pleasure to discover new ways of exploring the products created, the exciting nature of the work. When intrinsic and extrinsic motivation are put into action towards the same activity, the creative performance of the individual for that activity is at its maximum.

Creative education

The real concern for education is present in all systems of daily life. Education is an ongoing process that influences the perspectives of many young people, encourages the various talents of all our children.

Most modern countries have accepted the idea of reforming the education system, that is because education, in a way, can change one radically while also opening new ways in life, maybe different from what one is typically used to, and human resources are like natural resources - most often buried deep.

At the TED conference (2006), the following idea was circulated: 'We are all born with huge native talents, but by the time we go through education, too many of us will have lost touch with those. Many talented people think they are untalented, because that something they were good at in school was not valued or even stigmatized. The consequences are disastrous for individuals and for the health of our community'.²¹

Each individual personal resources must be identified, praised, validated. It often takes the openness of educators to reach them. They are not present on the surface; they must be searched for in depth. Also, the context created at a micro-group level contributes to the discovery of individual potential and grants the possibility to transfer them to the macro-group level, at the macrosystem level. Analyzing carefully, we can see how most education systems in the world are undergoing a process of reform as of today.

Even with all these efforts, we can say that it is not enough. The reform no longer helps, because it only improves a model that does not work. What we need is not evolution, but a revolution in education.

²⁰ Popa, C., Dobrea, A., *Evaluarea creativității și a intereselor artistice ale elevilor Un model de cercetare educațională*, București: U.N.A.T.C. Press, 2019.

²¹ Robinson, K., *Școli creative*, București: Editura Publica, 2015, p.14.

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The challenge is not to repair this system, but to change it; not to reform it, but to transform it. Creative and technological resources can be used in this regard to change the mentality of those involved in this complex process of transformation.

We now have unlimited opportunities to stimulate the imagination of young people and to offer them forms of teaching and learning that are adapted to them²².

The change of roles in school is strongly influenced by the assessment field of 2021, by creative thinking, preceded by ‘creative problem solving’ which became ‘problem solving through collaboration’ in 2015 and ‘global competence’ in 2018²³.

Criteria analysis for selecting children abilities building strategies starts to be sought after through an obvious question: *What are the skills that children need and that will be useful to them in school as well as outside of it, in the real world?*

Non-governmental organizations and teachers have identified a common mistake regarding the idea of capabilities. It considers the development and approach of evaluation from the perspective of capitalizing on existing capacities, in training etc.

We mention some of the international projects that support this approach: The Assessment and Teaching of 21st Century Skills (‘Assessment and teaching of 21st century skills’), New Pedagogy for Deeper Learning, Partnership for 21st Century Learning, Expansive Education Network etc.

The disposition of teachers is relevant for successful inclusion of skill training in the formal, informal and hidden curriculum of the school.

Example: Rooty Hill High School in Australia is one of the educational institutions in which teachers have provided valuable information on the basis for carrying out practical activities that can be useful to educational institutions around the world. Practical, reasoned advice will serve as an impetus to accept a different vision, which leads us to the vision on the value of systematic capacity building, such as deep disciplinary knowledge and useful academic or practical skills.

In order to comprehensively address the set of skills required in one’s life, the word *character* is mainly used, with an additional classification of the term *performance character*, referring to those certain attributes that are often associated with accomplishment of performing well in an academic test, exam or competitions²⁴.

²² Robinson, K., *Școli creative*, București: Editura Publica, 2015.

^{23,25} Lucas, B., Spencer, E., *Predarea gândirii creative - dezvoltarea elevilor și studenților care generează idei și gândesc critic*, Editura DPH, București, 2021

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Educating the younger generations is a challenge for parents, teachers, and those in higher powers in education.

The abundance and variety of ideas about what the school could do well for the education of present and future generations generates difficulty and restraint for a common approach.

At the Real-World Learning Center, a significant number of people from all over the world named what their expectations were in relation to scholar education. The result is an indication of the work we may all want to do to complete children's education.

In order to illustrate some of the aforementioned values, we can have a look at the set of educational goals proposed:

- They should be suitable for all students.
- They should prepare children for lifetime learning.
- They should help us better understand that, in an individual-centered approach, abilities and character are just as important as one's success.
- Equally recognize and praise vocational achievement and academic achievement.
- Raise our children more happily.
- Get parents efficiently involved.
- Fruitfully engage with business.
- Use the best possible methods for teaching, learning and assessing.
- Understand how testing is best used in order to improve results.
- Give value and importance to creativity and professionalism of teachers.
- Proactively encourage and contribute to the development of educational institutions.

When asked which of the abilities matters most, and the answer to that was the third aspect of the list of stated expectations: to understand that, in an individual approach, abilities and character are as important as success²⁵.

One of the goals of education is to facilitate the preparation of the individual for social insertion, for professional integration on the labor market.

From an economic perspective²⁶, and from the perspective of researchers in education²⁷, a list of transferable capacities or, in some cases,

²⁵ Lucas, B., Spencer, E., *Predarea gandirii creative - dezvoltarea elevilor si studentilor care genereaza idei si gandesc critic*, Editura DPH, București, 2021, p. 4-5.

²⁶ file:///C:/Users/MSI/Downloads/SSRN-id1922022.pdf, accessed 05. 09. 2021

²⁷ file:///C:/Users/MSI/Downloads/GutmanSchoon2013Non-cognitive_skills_literature_review_.pdf, accessed 30. 08. 2021

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transferable skills that improve the outcomes of learners and therefore of society as a whole is presented.

Lately, we begin to see more clearly those capabilities that are particularly useful. Here are two lists, conceived from an economic and pedagogical perspective.

Table 1. Transferable abilities and skills, after Heckman and Kautz²⁸; Gutman and Schoon²⁹.

Heckman and Kautz, 2013	Gutman and Schoon, 2013
<i>Perseverance</i>	Self-perception
<i>Self-control</i>	Motivation
<i>Confidence</i>	Perseverance
<i>Attention</i>	Self-control
<i>Self-esteem and efficiency</i>	Meta-cognitive strategies
<i>Adaptability to change</i>	Social skills
<i>Openness for innovation</i>	Resistance and adaptability
<i>Empathy</i>	Creativity
<i>Modesty</i>	
<i>Tolerance towards others</i>	
<i>Positive engagement in society</i>	
<i>Creativity</i>	

The obvious similarities between the two perspectives show that the demand of employers is essentially similar to the demand made by researchers in education. Creativity is one of the common requirements formulated by the parties participating in this process.

Creativity in teaching

Andreas Schleicher and Qian Tand, in *Universal Basic Skills: What Countries Stand to Gain* (2015, p.9)³⁰, presented a range of relevant information on skills and pedagogy.

The main idea of the presentation refers to the solid base of knowledge and skills held by all people. Which means that the central goal of the educational agenda after 2015 was derived from this existing knowledge base.

These data underline what the first step towards highlighting the existence of children's knowledge and skills is. That is, mostly, about making

²⁸ file:///C:/Users/MSI/Downloads/SSRN-id1922022.pdf, accessed 05. 09. 2021

²⁹ file:///C:/Users/MSI/Downloads/GutmanSchoon2013Non-cognitive_skills_literature_review_.pdf, accessed 30. 08. 2021

³⁰ OECD (2015), *Universal Basic Skills: What Countries Stand to Gain*, OECD Publishing, <http://dx.doi.org/10.1787/9789264234833-en>, accessed 25. 08. 2021

sure that each individual is concerned with developing a solid knowledge base in key-disciplines, making sure that they develop creative, critical thinking and cooperative skills and build attributes of knowledge such as: attention, curiosity, courage and endurance³¹.

Creative pedagogy is defined as the science that has as its main concern the analysis of art and creative teaching. It supports teachers in discovering creative teaching methods while supporting children's creativity. Creative pedagogy is a scientific pedagogical sub-field and an effective type of creative teaching. It can be applied in all fields, arts etc.

The notion of creative pedagogy was noticed and quoted by educators interested in carrying out creative activities. This concept was also introduced in the Encyclopedic Dictionary, where it was mentioned, among other specific elements, its atypical form of invention formula³². The main goal of creative pedagogy is to change all disciplines (course, program, school) into a type of creative teaching that produces creative children who bring more results than those educated through a traditional method. This change is known as 'creative orientation'.

The need for further learning is strongly influenced by changes in all areas, it is necessary not only to know and do things, but also to pay attention to the dynamics between the elements of general and specific competences of each field of action.

In the book *Teaching creative thinking*³³, several expressions are presented that could capture by definition, the terms: abilities, dispositions, attributes, competences.

There are authors who refer to these as noncognitive skills, soft skills or qualities. These slight connotations are not to our liking, as they may be associated with genetic inheritance. The choice of authors is closely linked to capabilities³⁴. Disposition-based instruction sums up the pragmatic philosophy, that is, the special attempt to cultivate in children certain dispositions necessary both in school and later in life.

The term provision needs to be introduced among teachers as well, in the form of encouraging, developing and using it in all educational contexts. The reflective disposition to learn is the starting point in this approach, the disposition to be anchored in the educational reality and actuality. The real challenge stems from those positive dispositions of teachers to create an

^{31,33} Lucas, B., Spencer, E., *Predarea gandirii creative - dezvoltarea elevilor si studentilor care genereaza idei si gandesc critic*, Editura DPH, București, 2021

³³ Aleinikov A.G., Creative Pedagogy. In: Carayannis E.G. (eds) *Encyclopedia of Creativity, Invention, Innovation and Entrepreneurship*. Springer, New York, NY., 2013
https://doi.org/10.1007/978-1-4614-3858-8_13, accessed 05. 09. 2021.

³⁴ Bocioaga, L. (2012). Creativitatea. Citit la: *Creativitatea* (slideshare.net)

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atmosphere suitable for the event. In cultivating efficient didactic technique, we will follow these reference questions:

- ✓ How can I encourage a child to be more creative?
- ✓ What methods would I chose for helping the children adapt easier to change?
- ✓ How would I use pedagogical strategies to inspire children to be more passionate about learning?

Dweck³⁵ and Hattie³⁶ presented evidence obtained through research on the attitude towards talent and the visibility of processes, which highlights that the chances to choose the methods that put us in the authentic area, facilitation practice, no matter what we teach. Decisions are determined by issues such as: tasks, the division of time during an activity and the desired result. The more a teacher goes from a ‘training’ approach to teaching to what Watkins³⁷ calls a ‘constructive or simpler approach’, the more different the decisions regarding the use of time, space and tasks show, the more the role of the teacher changes.

‘Good’ teaching is an effective combination of methods that have the best chance of getting you the results you want. Approach that leads to the combination of abilities, skills and knowledge³⁸.

Principle of creativity

Ovidiu Pânișoară (2009)³⁹, emphasizes the importance of creativity in the educational process, stating that the difference between pedagogical success and failure can be achieved with the help of creativity of the teacher, but also of the children, as well as the interaction between the two subjects.

Creativity must be present both in the didactic act itself and in a goal of the education process, a desideratum that is also found in the educational policy documents. Let's look at the two perspectives:

The creative process begins long before the teacher meets the student group / classroom, he must find creative ways to use the resources at his disposal. He intervenes, of course, later in the activity, because the teacher cannot control all the children's reactions and must find ways to keep the student group / class under control.

³⁵ Dweck, C. (2006). *Mindset*. New York: Random House.

³⁶ Hattie, J. (2009). *Visible Learning: A Synthesis of 800 Meta-Analyses Relating to Achievement*. Routledge.

³⁷ Watkins, Chris (2005) *Classrooms as Learning Communities: What's in it for Schools*. London: Routledge.

³⁸ Lucas, B., Spencer, E., *Predarea gândirii creative - dezvoltarea elevilor și studenților care generează idei și gândesc critic*, Editura DPH, București, 2021

³⁹ Pânișoară, I. O. (2009). *Profesorul de succes. 59 de principii de pedagogie practică*. Iași: Ed. Polirom.

But the question arises: if the didactic activity consists to such an extent in a creative process, why is there a need for psycho-pedagogical information?

As Bailin states in his research (apud Weisberg, în Sernberg, 2005)⁴⁰, the creative approach must have an educational foundation in the field it wants to overcome or improve. It is not about reinvention, but rather about revolution, for a better functioning, we rely on the knowledge of the past so as not to grope in the dark and succeed only by chance.

Therefore, the importance of exposing and familiarizing the child with insecurity and change is highlighted, one of the aims of the educational institution being to create citizens and specialists ready to integrate into society easily (the economic function of education).

This can be done by integrating programs that encourage tolerance of ambiguity in schools. Of course, the purpose of the educational institution is to provide children with valid and concrete information, but once they have come into their possession, the encouragement to ask questions, to look at things from a different perspective or to offer a new solution will develop critical thinking.

Use of creativity can be a useful tool in the learning process, as the Zeigarnik effect indicates (Lakhani, 2008), in *Successful teacher*⁴¹, which claims that we rather retain what remains incomplete. This can be seen in the waiters, who remember rather what they ordered those who left without paying, or in the films that do not reveal the resolution of the conflict until the end, generating the desire to find out what will happen. Teachers can use this effect to keep the children's interest, by not finalizing the voltage curve in a single course. Thus, the retention of information by children is also favored. Although it requires didactic activity and generates creativity, the teacher should not be afraid to stray from the normal course of the educational process.

Pedagogical creativity exists because the teacher faces real situations, which are unique in that children are different, coming from different life contexts, put in a learning situation that must be adapted to them, so it is always different.

Therefore, pedagogy does not provide clear answers, fixed solutions, because this would not be effective. Clarifying this hypothesis with a metaphor, the teacher is trained on how to make a journey, he is given the necessary tools to reach the end successfully, but he cannot be told exactly what he will face, he must to adapt to the situation as he can and will know, using means available to him.

^{40,41} Pânișoară, I. O. (2009). *Profesorul de succes. 59 de principii de pedagogie practică*. Iași: Ed. Polirom.

Developing creative thinking

Next, we will offer a ‘good teaching’ model, in which we capitalize on the creativity of the participants. The model presented is taken from the book *Teaching creative thinking*⁴². This model can be easily adapted, taking into account the psycho-pedagogical and age characteristics of the participants.

Note that the model is taken entirely from the book mentioned above, but this does not limit us to stop the act of creation in the proposed approach.

Making connections

Seeing new connections between ideas is an important aspect of the process of synthesizing creative thinking.

A basic approach; visual mapping

An important ability is to gather ideas to make a new theory or a new product. This could mean assembling notes to make an orderly file from which to learn, arrange the logical flow of ideas for an essay, or choose an element of a problem that should be addressed first and the information and steps needed to solve it. It is often helpful to be able to visually represent ideas or concepts. For example, an essay plan can be represented using a series of sticky notes that contain keywords signifying relevant arguments and theories. A book plan could include chapter titles, short summaries, and key concepts.

The writer can then organize ideas into a logical flow. Making connections requires us to keep two or more ideas in mind at the same time, and then see how they relate to each other. It is also about using ideas to develop action plans. Planning is a valuable component with a significant scope in terms of real-life activities. Planning starts from the architectural concept in a construction project, a course program translated into a concrete work plan.

As previous experience has shown us, in life, we are rarely offered a complete set of ingredients and a clear instruction to follow; unknown real-world occurrences mean that creative thinking is essential to bringing ideas together in useful and sometimes new ways. This is where the ability to make connections between separate, different elements is needed. And, for many people, the ability to see ideas in a visual way is useful.

⁴² Lucas, B., Spencer, E., *Predarea gândirii creative - dezvoltarea elevilor și studenților care generează idei și gândesc critic*, Editura DPH, București, 2021, p.87

Here are 4 ideas that can help you begin right now:

Initial idea no.1 - Sequencing a task:

Some children will feel more comfortable about the workload if they can have a visual representation of a sequence from an activity with a task or a series of information from an activity. Help them separate a work sequence into a diagram that they can complete while completing various required steps. For older students, a Gantt chart is a way of representing the work done in certain periods, taking into account the tasks that need to be accessed before others. This will help students make mental connections between different sequences of their work.

Initial idea no. 2 - Choosing the key element:

This activity can be adapted, but still be challenging, in essence, for children to make the connection between objects or concepts to decide which do not belong to the category. For younger children, you can choose three objects with a common theme, categories such as animals, painting, buildings, trees, monarchies or vehicles.

The options are multiple and work well if they relate to a subject you are studying, for example, design and technology, elements of plant origin compared to elements of animal origin. It is useful if you have in mind why one of the three might be different from his neighbors, but be prepared to listen to alternative ideas. The relevant point is that all children are able to express themselves rationally to select the strange option.

Two-column associative list

Make a table with two columns - in the left column you will write the chapters, the areas in life where you would like things changed, and in the right column a number of 10-15 terms that signify a desirable state, which you aspire towards reaching.

In the first stage it is enough to write down only one area on the left, for example 'School / Educational Institution'. You can then redo the list by entering the subdivisions you have identified (for example: relationships with colleagues, relationships with management, endowment with modern equipment, etc.).

The table down below offers a list, that Sidney Parnes⁴³, the author of the earliest and most used creativity manuals in the United States, suggests. In this list, you should identify links between each item from the left to one on the right.

- ✓ You will have associated pairs, such as: career – improvement.
- ✓ What could I do to have a job in my field of knowledge?
- ✓ How could I bring some improvement to my workplace: get a computer, have my colleagues be more agreeable etc.?

⁴³ <https://wciw.org/creativity-general/sid-parnes-obituary/>, accessed 19. 08. 2021

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- ✓ After that, move on to the pair: career – happiness and comfort.
- ✓ How could I get more gratification from my job?
- ✓ What is it that I could change, and have a profession that I actually enjoy doing?

Continue on with the pair career – disagreement, and so on.

Finally, pick out the topics that you find most problematic, to further reflect upon.

Table 2. Two-column association list

<i>Fields of interest</i>	<i>Terms</i>
<i>Friends</i>	Improvements
<i>Family</i>	Happiness and comfort
<i>Neighbors</i>	Disagreement
<i>Church</i>	Complication
<i>School</i>	Waste of time and inefficiency
<i>Home</i>	Routine
<i>Workplace</i>	Aptitudes
<i>Promotion</i>	Anxiety or fear
<i>Car</i>	Anger
<i>Career</i>	Lamentation
<i>Social life</i>	Safety
<i>Hobbies and spare time</i>	Durability
<i>Finances</i>	Appearance
<i>Future plans and goals</i>	Savings
<i>Hopes and wishes</i>	Performance

Proposed exercise: Look at the term *friends* and, one by one, try to link it to the words on the right. Finally, make a list of 10 topics/ problems that you had to modify/ intervene in, in order to keep the subject *friends* in conformity.

Parnes' list of questions:

In order to improve the quality of your life, you can detect existing problems with the help of the list over below. Answers to these questions shall become topics to look deeper into.

- ✓ What would you like to have, to do, to accomplish?
- ✓ What would you like to happen in the future?
- ✓ What would you do better than you do now?
- ✓ What would you have liked to have more time for? What about more money?

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- ✓ What would you have liked to get from life?
- ✓ What are your unaccomplished goals?
- ✓ What kept you from fulfilling them?
- ✓ What upset you recently?
- ✓ What makes you worried, anxious?
- ✓ Is there anything you can complain about?
- ✓ Have you had any disagreements with anyone around you?
- ✓ What would you like others to do?
- ✓ What changes are you going to implement for yourself?
- ✓ What takes too long?
- ✓ What is being wasted?
- ✓ What is overcomplicated?
- ✓ What constraints are there?
- ✓ In which ways are you inefficient?
- ✓ What tires or irritates you?
- ✓ What would you like to have organized better than it currently is?

In his practical courses for Creative Problem Solving (CPS) at Buffalo State Collage, USA, Donald Treffinger came up with an even more elaborate map, that calls for more personal input in making associations, as it is composed of 4 different columns (see table below).

Table 3. Treffinger map for creative problem finding

Characters	Sceneries	Purposes	Obstacles
Parents	The desert	Retrieval	Stress
Grandparents	The North Pole	Survival	Lack of resources
Friends	Archipelago	Maintenance	Laziness
Neighbors	The street	Comfort	Legislations
Sniper	The back yard	Becoming better	Distance
Reporters	The forest	Being prettier	Lack of attention
Journalists	The moon	Creativity	
Filmmaker	Hospital		
Actors	The beach		
Plants	University		
Animals			

When a single answer is identified, we can talk about convergence; but being creative, would imply to identify several solutions. A convergent problem does not allow you to find more solutions, instead the divergent problem has a variety of answers, some of them being quite simple, but the original, unusual ones can be identified.

One can say that any problem solving requires an act of thinking, and each act of thinking involves an act of creation, which leads us to believe that

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there is a similarity, at least partially, between the current problem solving and the act of creation.

Stimulating creativity so early as preschool level is a complex approach that adds to the activation, training and cultivation of the child's creative potential. This period is an important stage in the assimilation of information, the formation of skills, the formation of a creative thinking, for the formation and development of the personality of future adults, who will be able to bring changes in the society in which we live.