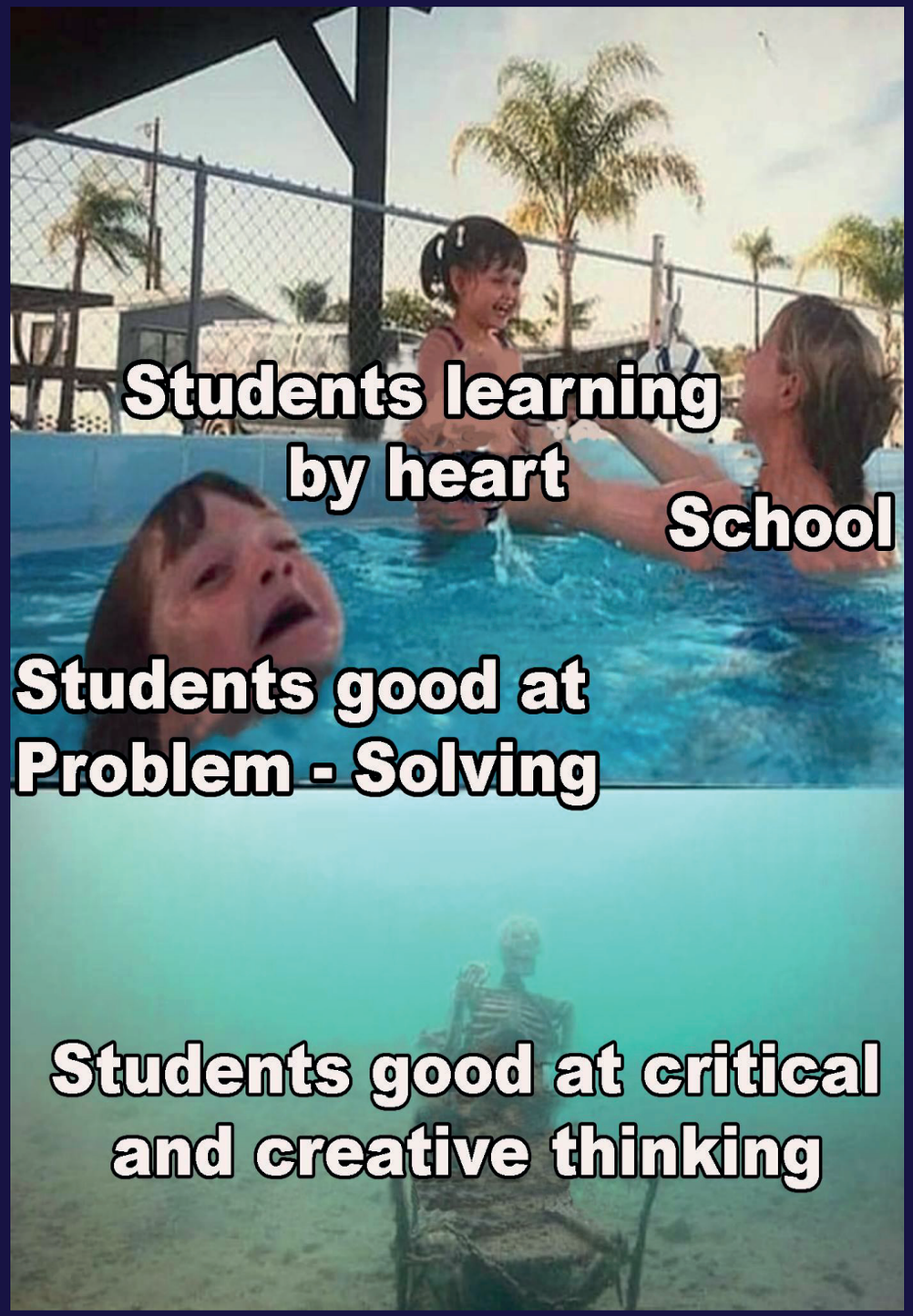


WNIMTR

Funded by the Erasmus+ Programme of the European Union

WE NEED ILLUSIONS MORE THAN REALITY

Theoretical and practical basis

FINAL BOOK

Idoneus

CONIL

CRAS

WE NEED ILLUSIONS MORE THAN REALITY

Project Reference : 2020-1-IT02-KA227-SCH-094850
Programme Erasmus+ key action 2 "Strategic Partnership"

Funded by the
Erasmus+ Programme
of the European Union

DISCLAIMER

Project code: 2020-1-IT02-KA227-SCH-094850

If you can’t feel wonder
you’re dead

Albert Einstein

Introduction

In these few lines I will try to summarize the reasons, the methodology and mostly the theoretical bases on which I developed the project on which we will work.

I find it very important and interesting to explore the possibilities that open up to learning and structuring personal thinking by acting on the development and "training" of the innate abilities of the human mind, and therefore I think it is a good thing to start from the EMOTIONS.

The primary emotions are those shared by humans and most animals whose behaviors can be detected.

There is a division between the opinions of researchers: some divide them into 5 fundamental ones, others into 6, some into 8 divided into 4 groups. (1)

As far as our work is concerned, we will take the definition that establishes 6 FUNDAMENTAL emotions.

But first I have two explanations to do : Why talk about emotions and why highlight the word FUNDAMENTAL.

It is evident that in archaic cultural transmission, where culture is understood to mean the set of basic notions, collectively shared and indispensable for the subsistence of the ethnic group, ORAL transmission was the primary component.

The tales, the myths and the fabulation, as well as the spectacularization through Wizards and Fools, was the best way of transferring information and a winning model of cohesion around the rules indispensable for survival.

But didn't these practices just leverage emotions?

Well known (and applied) is the rule that by spreading and manipulating fear the behavior of entire populations is easily conditioned; we want to probe and study how much happiness and what consequences the SURPRISE can generate.

We need the identification and use of the word Fundamentals to be able to move away from what psychology calls “animal drives" and find different ones instead.
Those mediated by the intellect.
This is due to the simple fact that, in our analysis and research on the field, we will have the task of discovering more nuanced, complex and articulated emotions in order to determine how emotions are transformed into feelings and, above all, help to focus and fix themselves in memory.

To do all this, the first step is to identify how to acquire data.
In a culture that is rapidly passing from a written, graphic, solitary transmission that left an important margin for reflection, to a new model based all on images, pressing and increasingly solitary (albeit well disguised as a "collective") what we need to know is how illusion works on minds without superstructures.
In my long years of working with children I have noticed a drastic change in their attitude that does not allow us to use them as a champion. They have lost or are losing the pleasure of listening, of dreaming, of reverie. They increasingly reduce their experiences to what they know and are absorbed by the imagination only in rare cases. I don't know how much Harry Potter would have had the same hold today as it was 25 years ago. We will then begin our research by trying to understand what effects the illusion creates on children with Down syndrome, autism or / and on minds that have undergone big psychological stress.

(1) 5 emotions: Joy, Sadness, Fear, Anger, Disgust.

6 emotions: Joy, Sadness, Fear, Anger, Disgust, Surprise.

8 emotions: Joy / Sadness, Fear / Anger, Disgust / Acceptance, Surprise / Expectation.

We will ask them to participate in experiments where the rules they know will be messed up. Where through the illusion, they will live a magical experience.

We are interested in knowing what their immediate reactions are (for this it will be essential to explicitly resume the experiments by focusing attention on facial and body expressions) as well as interview the participants and subsequently learn about their emotions and (very important) their memories.

In this regard, I will send you a series of possible situations (and materials to be obtained) in order to organize experiments, filming and interviews.

I hope this clarifies you and gives you access to the first step of our work. I am sure I have not been completely exhaustive with these reflections of mine so feel absolutely free to ask questions.

Chapter 1
Why the magic? (or rather illusionism)

The history of man is the history of the journey in the search for understanding phenomena.

We can even assert that the very essence of man resides in the discovery of the world, of the secret of natural events and of existence itself.

In archaic societies, everything that escaped understanding and "rationalization" was delegated, for decoding, to the world of magicians, sorcerers or shamans; to those who, through ascetic practices, were able to communicate with impenetrable universes that were closed to most people.

This gave the various Tricksters a different and somewhat superior social power to that of the bosses themselves.

A necessary, if not essential, power to complete one's knowledge, seeking an explanation of the mysteries, giving a justification, albeit irrational, to the elusive vagaries of the world and of life.

Weather, famine, disease and even death thus had their interlocutor.

However, I would like to focus for a moment on the meaning of the word Trickster.

The translation, let's say literal in Italian, is cheat. Where trick is synonymous with cheating. Equally in the interpretation of dictionaries, the word suggestion is deciphered with the negative meaning of conditioning, plagiarism.

For all our research and elaboration we have to overturn this interpretation of the two terms by giving them a positive value. Extremely positive.

So we will interpret:

Trickster as "the one who knows different ways to knowledge"

Suggestion as the moment in which, by suspending rationality, the human being is able to seek and find solutions, triggering a process whereby the mind approaches a given situation with new weapons. With an enriched ability to invent and / or find explanations to problems, contaminating what he already knows (through a rational learning approach) with what his mind processes by abstracting himself from this acquired knowledge. But let's go back to an analysis, albeit quick, of the mysterious world that escaped the knowledge of primitive peoples. In order not to leave room for fear, they tried to complete their consolidated knowledge with explanations that included inaccessible beings and places, thus giving space to the creation of MYTHS. The singular thing also analyzed by psychologists of the caliber of C.G Jung is that this presence of decoding of reality linked to a world inhabited by supernatural beings is present at the same time, albeit with different shades, in all cultures and in the most remote corners of the world.

(The divine rascal page 177/201 - AAV) (Il Briccone Divino 177/201 - AAV)

As if abstraction and the use of irrational models was an intrinsic human need.

Unfortunately, the logic of the age of enlightenment (and the false certainty of having reached a high level of knowledge of the universe) has removed Western civilization from any attraction for prodigious and illogical worlds, leaving it to modern man, to compensate for its cultural gaps, only religions.

At this point, so as not to fall into misunderstandings, we also give a unique meaning to the word CULTURE that we will often use in our research path.

Culture: the set of knowledge shared by a certain ethnic group in a certain historical period, necessary if not indispensable, for the survival and subsistence of the ethnic group itself. Whether they are considered, by an external observer, to be rational or irrational.

So laying the basis for an interpretation of the reasons for our research, where we assert that we need illusions more than reality, we can say that we will try to demonstrate how magic, fascination, abstraction, have an indispensable role for the development of a virtuous model of learning.

We will try to lay a solid foundation for the indispensable need for a complete, important and lasting CULTURAL development, of the illusion and the surprise that derives from it.

Chapter 2
A digression: Wonder, Wonder and the Immune System

In recent years, medical research has focused heavily on cytokines.

These are proteins (or protein molecules) produced in various ways by the human body, which have an important function in the evolution and functioning of the immune system. They can transform the cells that produced them, operate directly on neighboring cells or even intervene on the endocrine system by acting positively on many inflammations and infections. They are even crucial in the treatment of some autoimmune diseases such as multiple sclerosis.

In addition to the countless functions they perform, including at the level of cellular communication and information transport, they have the ability (interferons) to induce human cells to resist viral infections.

We can say that the study (and understanding) of the production and regulation of cytokines by the human organism is one of the new frontiers of research in the field of physiology and pathology.

As for us, we should know that recent studies conducted by major universities (Toronto, Barklay, California) confirm that amazement and wonder induce the production of cytokines that act directly on a positive strengthening and functioning of the immune system as well as inflammatory processes. of the body.

In the presence of positive emotions related to surprise, they develop and produce anti-inflammatory molecules that can contribute to important phenomena of self-healing.

This discovery, in continuous evolution and in close correlation with the understanding of how primary emotions act on the body, gives us a great responsibility. We must bear in mind that human activities, interrelations, the arts, as well as illusionism, have a function that goes far beyond entertainment.

We can be and become, in addition to educators, also bearers of well-being.

Chapter 3
A scientific approach.

Primary emotions stimulate the elementary and instinctive structures of the brain

The brain is the most amazing and mysterious organ that exists in the entire universe. Of its composition one knows something, but little, while almost nothing is known of its functioning. Recent approaches to research have tried to establish its evolution, dividing the brain into three distinct stages of evolution. A basic brain or REPTILIAN (because reptiles have a conformation that includes only the base part of the brain) born about 500 million years ago, which underlies the primary instincts: the search for food, the mating, the defense of the territory, the choice between attack or retreat, the survival instinct. It's formed by the cerebellum, the brain stem and the base nuclei. It sends information to the muscles at more than 450 kmh and makes the heart beat as well as allows breathing. It senses temperature changes and determines the alternation between waking and sleeping.

This is the part of the brain considered the most "ancient" that seems to have remained unchanged since the appearance of man on earth. An indispensable brain that then evolved with the formation and development of other areas that gave rise to the brain LIMBICO. Part of the brain mammals have. It develops about 200 million of years ago; seat of the primary emotions allows, for example, to take care of the progeny, to transform the sexual attraction in transport towards a/a determined companion/or, therefore, in affection.

He feels pain, fear, overcoming the simple stimuli/instincts that are however the first ones that are felt in the face of emotional situations.

It controls memory and play, as well as social relationships. It recognizes and generates fundamental emotional reactions. It's formed by the hippocampus, it carries memory, the amygdala that handles emotions, the thalamus that handles the feelings of the various sense organs, and the hippocatalam. We could call it EMOTIONAL BRAIN.
The so-called cognitive part of the brain was the third to form (about 100,000 years ago) and it's the one that analyzes the problems, solves them. It's the fundamental seat of reasoning and memory as well as language, decisions and self-control. This is the COGNITIVE BRAIN, the NEOCORTEX (folded on itself, if it were extended would measure 2mq) and its operation, as the results that it succeeds in obtaining regarding the production of solutions, thoughts and creations, depends on its culture model and how much history it has accumulated (for the interpretation of the term CULTURE refer to what already expressed in chapter 1).

Neochirurgical studies have found that brain development in children, from birth to maturity, follows exactly this development.

As for emotions, the brain works like this: the amygdala is the center of perception and processing of emotions. When we feel anger, that's where our reactions and alterations

start, so when we feel surprise, it's in that area of the cortex that we decide whether to be happy about it or, on the contrary, to consider it a sorrow.

The emotions felt by this part of the brain are transmitted with force to the hippocampus, with which it is strongly linked, to be fixed in the memory areas. In this way the experience that dopamine has reported is fixed in the memory. Man better memorizes everything that moves him.
(The brain is bigger than the sky - p. 62 - Giulio Maira)
(Il cervello è più grande del cielo – p.62 – Giulio Maira)

It is our conviction that the stimulation, through the use of illusionism in the pedagogy of teaching, of the emotional centers that underlie the emotion of surprise, also strongly stimulates the memory centers, that, therefore, exercise in wonder has a strong impact on cognitive development.

Chapter 4
Models of teaching and cultural transmission:
Oral, written, for images and new proposals.

We are witnessing an important and radical change in the sphere of the use of information. In recent years we have moved quickly from the written word to the moving image. The video has taken over. The footage replaced the description.
Just look at the instruction booklets of any electronic apparatus. From volumes of 10/20 paragraphs we arrived at a page exclusively of drawings.
The intuitive word, which seems like a nice thing, implies the impossibility for the user to use what he bought, in a single way, the one decided by the manufacturer.
There is no autonomy in carrying out operations or in analyzing the facts, you simply have to operate according to "prefabricated" schemes and in some way, simplified.
While this simplification seems to be useful for everyday trivial things (use of a microwave, assembly of a small piece of furniture) we do not know where it will lead this new method of learning in use, more and more, even in the school where you are sliding towards this modus operandum. The kids use tablets, in the classrooms there are lims that seem to evolve old books and chalk but I would like to point out what changes in the learning process.
The virtual mastery of all the information, the possibility of always having access to it and, above all, the possibility of archiving it with the "copy paste", has made to abandon an old procedure that was that to take notes. Things were read and immediately reworked to be annotated. The synthesis that was drawn from it was personal and in some way reflected one's own way of thinking, so it adapted and connected easily to one's own knowledge. It was a way of bringing concepts to a synthetic form , useful and easily memorisable. The banal illusion of always having at your disposal any information you need, means that these storage processes are, more than that, abandoned.

Earlier in oral transmission, fantasy and imagination had the important function (and ability) of recording what was learned by creating personal paths and images in the mind. Now the image weighs the place of the imagination that no longer seems to be needed. The video is exhaustive, the audio that accompanies it completes it. Our mind should no longer create, but only enjoy (and memorize?).

This, in our opinion, will be the real and big problem of future generations if we do not help the rebirth of a cognitive process that asks our mind to elaborate strategies, connections, solutions. To have doubts and to look for answers; in this way we will have lost what Tiziano Tersani calls "*the antennae. Those that allowed a sailor to perceive the ripples of the waves in the distance, to read the flight of birds, to interpret the breath of the wind". (A fortune teller told me -Tiiziano.Tersani) (Un indovino mi disse –T iziano. Tersani)*

How can we avoid this impoverishment, this atrophy? (Allow me to say, since I work with children for 40 years, that in the last 10 years we have witnessed a worsening of the situation)
We can do it with illusionism and, above all, with the wonder that is created when we witness a magical effect.

When a mind is moved, because the knowledge it has of a certain phenomenon is overturned, the presuppositions for a question without apparent answers are created in the mind itself. How can a thing fly if I know perfectly well that's not possible?
Thus thought, elaborated and discarded its own knowledge, triggers a mechanism of research also (and this is very interesting) through abstractions, inconsistencies, senseless situations sometimes impossible, looking for a solution to justify the event he witnessed.

We believe that this seemingly irrational part has a key function in the development of creative and innovative abilities.
There is a moment, called the default mode network, in which the human brain is placed in a very special condition, I dare say special. "To tele modalities are attributed the moments in which one wanders with the mind, moments in which, unconsciously, put me in relation to each other accumulated knowledge in the past and in which we perceive a capacity of deep understanding of reality.
Wandering with the mind is an inexhaustible source of creativity, the spark of innovation that leads to a growth of knowledge and ingenious creations. (...) In practice, we dream with open eyes, we let the mind wander in time and space, without an apparent purpose, which for a long time was considered absolutely meaningless, but which today is believed to have much to do with creativity.

For Seneca, only when there are conditions and time to reflect, takes the opportunity to attend themselves, to find valuable insights, unexpected solutions. Only in these conditions the brain activates the imagination and finds the opportunity to reflect and create.
Creativity is the ability to intuit the new and to solve complex problems, to organize knowledge around a new vision; it is the ability to create and invent images and to realize them. Where there is creation, something that was not there before enters our world and transforms it, modifying the perception and meaning of life. (...) Creativity, unlike other cognitive functions, is at its most during childhood and is lost as you grow up. Yet creativity, in life, in work, in social relations is considered one of the most important cognitive functions, at the base of intelligence as it is defined today, that is, the ability to solve new problems. According to the World Economic Forum, creativity will be a crucial skill for tomorrow's world of work.
(Giulio Maira Op.cit.)

Another fact to the detriment of learning through video is that the images flow, more and more fast (we have passed from sequence plans and cuts of assembly with decidedly long times to a succession of convulsive changes of framing, to the limits of the frenetic). This dramatically affects attention time.
We must make an enormous effort to teach reflection, cognitive patience, boredom that triggers conjecture, that recovers and mixes acquired knowledge but, at times, already archived (and that often are lost).

Memory is a strange mechanism, still obscure, but what we know and are certain of is that long-term memory is stimulated by reflection, from curiosity and abstraction which are the essential ingredients to give rise to the spark of invention and innovation.

Maryanne Wolf, a neuroscientist specializing in psycholinguistics, recently focused on the concept of "cognitive patience", that is, the need to teach the new generations not to live by preconceived concepts, but to form their own opinion, without haste. To remain deliberately in the "limbo" of non knowledge (very different from the concept "blissful ignorance" so much praised by our grandparents) acquiring, also and above all, through reflection and sedimentation of knowledge, CULTURE, without simplifying but expanding their visions.
This implies stimulation and, if I may pass the term, cultivation of curiosity.
Cognitive patience is not an easy exercise and implies the frustration of not being able to give immediate answers to the demands of the world, which instead seems to be increasingly required: we must be fast, always ready, always ready to answer. At a historical moment in which the stories of Instragam of 15 seconds are the master it seems that this ability is being lost.
(Chiara Perotti, Psychologist Psychotherapist)

Is there a clear connection with the use of illusionism and magic in learning processes?

Chapter 5
Operating model

> If you want your child to be smart, read him some fairy tales; if you want him to be VERY smart, read him more!
> Albert Einstein

Surprise and its consequences. (Primary emotions)

What is the purpose of our research? I try to summarize a statement:
Projecting ourselves into the future of learning by developing a model that is not simply a technological evolution (without any cost/benefit analysis) but that examining, decomposing and elaborating all the pedagogical experiences so far, can determine what to add (and what not) to integrate and help the development of the current school model.
It can be very useful to interrogate neuroscience to address this path.
At the current state of knowledge, that's how the brain works.
Although still the most mysterious thing on earth, the human brain, evolved compared to that of other mammals for the ability to process primary emotions and make them become complex feelings, is formed by distinct areas that imply different functions. The synapses that are created continuously between the various areas determine their processing skills. (This is a simplification, but quite precise).

Let's focus on how we perceive and memorize emotions. The two parts that affect our project are the amygdala and the hippocampus.
The Amygdala oversees the processing of emotions. The events that strike the amygdala for their emotional content, are imprinted in the memory; we remember better when something excites us. The relationship between amygdala and hippocampus, that is, between emotion and memory, is very close.
The function of the hippocampus is twofold: transforming short-term memory into permanent memory and keeping the ranks of our memories.
(Giulio Maira - Neurosurgeon)

Why is storytelling even more important than explanation? Why are fairy tales (even evening ones) indispensable tools for creating memories? How can emotion give rise to more lasting storage phenomena than the study?
Because it's not neurons but neural networks (the amount of synapses) and the substances that they produce by activating them, to determine the proper functioning and the potential of our thinking and everything set out in the previous questions is summarized in the research that we are preparing to undertake.
Neural networks are formed in an important way in front of surprise and amazement, in the activation of thought that elaborates and seeks solutions, when curiosity is stimulated, when magic activates magic.
We talked about Trickster and their social function (Il briccone divino op. cit.) and this is what we must become and make our boys n.e.e.t (nider in enployment in education or training). Sorcerers of emotions.

We will carry out a depistage (making some shots, in order to have data that can be analyzed in later stages) on various types of guys who attend shows of illusionism. Children aged 6 to 10 years - with down syndrome or/and autism. This is to know the irrational and emotional responses aroused by magical effects specially studied.

We will try to recognize from their reactions, through the analysis of facial expressions and body language, what are the immediate emotions and through interviews and Q&A we will try to deepen our knowledge about it.
We will do the same on a sample of adults both with learning problems and not, in order to try to identify which are the cultural superstructures that prevent the free enjoyment of wonder.
These data will be an indispensable basis for developing a model of learning through, and by means of illusion
We are fighting against a social system, that of the availability of information and a consequent atrophy of the need to memorize, and we do not know if the mutation that will occur in the minds of our great-grandchildren will reveal more evolved models of thought, if the world that this transformation will create will be better or worse than what we would like to shape, but I am convinced that our vision of a "creative" brain is decisive for the problem solving that presents itself in this epoch where choices will determine in a substantial way the future of human beings.
What we can certainly say is that in the post-war industrial era, no one or almost no one has set himself as a parallel objective to the development of capitalism, the analysis of the long-term consequences. Few have had a vision or at least asked themselves the question in philosophical terms, while I believe that this practice is indispensable now, in the light of the developments and dissemination of educational practices with an evolution increasingly distant from human nature. More and more homologating.

Then we start again from man and from the basic word of philosophy: WONDER.

It follows practical scheme of work:

Step 1
Processing of two types of magic effects to present in the same context:
A pure illusion effect, where something happens for no reason other than magic itself.
Another where the magical effect is the compendium of a narrative. Where surprise comes in support of a story told that does not necessarily presage the use of illusions but that nevertheless incorporates them in the performance.

Step 2
organization and shooting of shows ad personam and collective, with the plates provided, with particular attention to the expressions and reactions of the public.

Step 3
Interviews with people participating in the shows (with video footage)

Step 4
Assembly and analysis of materials. (study of how the magical experience can activate the

creative process of finding solutions both in a concrete way, ie with references to their knowledge that in a completely abstract way)

Step 5
Development of a theoretical and practical model for the use of illusionism, the use of surprise and wonder, in the processes of teaching and learning.

Chapter 6
In addition to Chapter 3

Clarifications on: Emotions and memory in a small history of evolution.

It is very useful to have an approach, albeit superficial, of an evolutionary nature. To know, or even just remember, where our brain comes from and where it goes.

Before the advent of Homo Sapiens, that is, of that human brain capable of fully understanding the connections between cause and effect, man was equipped with a brain (we will call it the ancient brain) that was able to react exclusively to the indispensable stimuli. Hunger, fear, reproduction, survival. The development of language but above all the ability to remember and order experiences, to preserve them to make them useful and persistent are the prerogative of the brain that we will call "modern".

So in our braincase we have highly specialized structures in vital functions and in the processing of emotions (from the elementary ones to the most complex and nuanced) up to areas designated for complex intellectual operations. These last zones have been developed "inventing" new functions without losing anything of those acquired and consolidated.

The ancient brain dates back about 500 million years and its structure is identical to that of reptiles. It makes the heart beat, allows breathing (which also with respect to the processes of learning, breathing and the muscle that controls it, the diaphragm, would need a separate chapter and an important deepening) regulates our states of wakefulness and sleep (here again it would be necessary to better understand how to use sleep for learning and recording and storing information in the brain) perceives temperature changes, generates the feeling of hunger, implies the coordination that allows us to move. In short, it keeps us alive.
This brain, about 300 million years ago, started a slow evolution that taught him how to process emotions and, as a result, how to control behavior. He began to recognize the perceptions sent by the senses and to use them to understand the world around him; both in the field of threats and in that of pleasure, both in good and evil (understood as real categories of survival or death).

It’s this evolution that has allowed the various areas of the cerebral cortex to communicate with what we called the modern brain, what the Russian neochirurgist Luria calls "The organ of civilization".

It is the emotions, the wonder, the sensory experiences that press the ancient brain on the modern one and allow it to invent, create, memorize, elaborate and evolve. Without this essential thrust nothing that was FIRST imagined and THEN invented and realized would exist.

The spark is doubt, dopamine the messenger, neural networks the streets for solutions and memory consolidation.

Dopamine production, one of the keys to the functioning of the modern brain, is produced in the face of wonder and it is in this condition that the dopaminergic synapses and the nucleus accumbens are activated in a consistent manner and make a pleasant event by placing the mind in a receptive attitude.

We have 500 million years of brain evolution at our disposal. Let’s treasure it and, above all, let’s not throw it away.

Chapter 7
Some repetitions (but “repetita iuvant”)
Traditional learning and new avenues

https://www.facebook.com/sottosopra.idee/videos/4530116730371532/? extid=WA-UNK-UNK-UNK-AN_GK0T-GK1C

First watch this video.

Do we need to change our educational model? My answer is yes.

We have to learn again to give proper importance to words and their meaning. We have to go back to thinking like children. To recognize the difference between the "shorter" way and the "better" way.

What is the road?

I don’t know, but I’m sure the starting square is wonder and wonder. Certainly not the slavish repetition and learning through study as we conceive it today.

Writes Moravia

At the age of nine, I became ill with bone tuberculosis. I attach great importance to this disease, because because of it I did short and irregular studies, often interrupted....

We thank infinitely Prof. Nicola Donti for the fantastic synthesis from which we will start for a series of considerations.
We have already written:

Creativity, unlike other cognitive functions, is at its peak during childhood and is lost as it grows. Yet creativity, in life, in work, in social relations is considered one of the most important cognitive functions, at the basis of intelligence as it is defined today, that is, the ability to solve new problems. According to the World Economic Forum, creativity will be a crucial skill for tomorrow’s working world. (Giulio Maira Op.cit.)

The form of learning used in Italian schools is, although evolving, essentially traditional.

What do we mean by traditional? Which by now, by established practice, is believed to be the best possible.

Basically it makes use of the subsidiarity of oral explanations and the indications of the professors, to the texts of the books that are the prevailing place of study and learning. Such books often provide for the need to summarize the concepts in notes which, supplemented with explanations, serve to consolidate knowledge.

Therefore, basically a knowledge linked to the understanding and memorization of concepts considered fundamental.

As already mentioned, let’s not talk about the evolution and replacement of books with tablets that allow the phenomenon of copy/ paste, surrogate the ancient practice of

annotation, in the false illusion of having stored knowledge in a place that is always accessible and that eliminates a fundamental step for storage.

But we are talking about convergent questions and divergent questions.

Citation:
Professor: This year we need to ask ourselves wide-ranging questions, because if the questions are short-lived, even the answers will be short-lived...

Student: (stopping from reading the "sports courier") Aho, this is worse than last year....
(Greetings professor- movie from Riccardo Milani)

We all come from an educational experience that offers mainly a single model.

Explanation/exposition - deepening through individual study or (more rarely) group study - examination/questioning with answers related to the right/wrong duality.

Apart from some educational attempts, although interesting, marginal, this is the way to proceed in practically all fields of learning.

But the question is: are we happy with what this paradigm has generated? Are we happy with the society in which we live? Of a society that generates profit from destruction, from wars, food manipulations, annihilation, division into social classes and that increasingly distances man from his conscience and from having "human" behaviours?

We deepen the analysis of our educational and training systems.

Convergent questions and divergent questions.

The first (convergent questions) are those to which only one and only answer is possible. They are closed, authoritarian. They are the ones who are asked for a "RIGHT" reply. Questions that do not even (and not even remotely) raise the question of the response "to the state of current knowledge".

One correct answer and many others ALL wrong.

Divergent questions have a completely different characteristic: they admit not predetermined answers, open to new perspectives and multiple solutions, not to polemicize but to offer different horizons and useful to discovery and new knowledge

Our society, but basically all those of monotheistic religion, are reiterated by the general belief that there are two and only two categories. Right or wrong. Good or bad. Good and bad. Friends and enemies and bring all levels of knowledge back to such trivial duality.

Avoiding uncertainty means setting whole societies in seemingly democratic but essentially totalitarian paradigms.

The art of doubt is the most revolutionary that can be exercised with oneself but also with regard to society. Asking and asking questions is the subversive act par excellence.

Knowledge, the admission of error and the consciousness of uncertainty are fundamental foundations of democracy.

Using illusionism, conscious deception, in educational processes can only positively stimulate this way of thinking and proceed in one's cognitive development.

Thank you Mr. Gianrico Carofiglio for inspiring me this reflection and for reminding me (with the words of Bertrand Russell) that it is essential to put some question mark IN front of statements that for a long time were taken for granted.

Assist and propose effects of magic, in addition to immediately questioning their knowledge, induces, in an attempt to give an answer to the extraordinary event, the reasoning and the search for different solutions; all right but perhaps also all wrong, it doesn't matter.

Traditional learning methods have no component that activates the creation of these synapses.

Chapter 8
Stupor and Philosophy
(Prologue to the next chapter 9)

Probably without the word wonder philosophy would never have existed.

Actually, I formulate better.

Without the word wonder philosophy would never have existed.

Without this primary emotion, the science of existence would never have developed.

Plato and Aristotle make the word wonder the foundation of their thinking. The search for the surprise that stimulates questions that seek answers. Philosophy is the mirror of our brain, or at least it should be... Philosophy, foundational for almost all the other disciplines that have to do with thought (and not only) is the lever of evolution, the fulcrum of progress, the mother of questions. But, as we have already said, the questions must be wide-ranging because only in this case can the answers be as wide-ranging as they are. On the other hand, illusionism, the former queen of the arts, the one that by vocation produces wonder and suspends reality, seems destined to produce a single (demeaning) question: How did she do it?

This restriction of the field (and consequent decay of the interest) is probably due to several reasons, however, to a single phenomenon. The lowering of the level of the type of performance and the advent and the affirmation, even before the "MAGIC", of the ego of the performer himself.

It must be said that we are also experiencing a period of history that is not exactly ideal. A phase in which what they call science (that is, "the current state of knowledge") is taking over any possibility of abstraction. The historical materialism par excellence where there is less and less space for poetry, music (but you did not realize that it has completely disappeared from the contemporary?) and philosophy, now relegated if not ghettoized in small annual anniversaries.

And we live at the mercy of those who consider truth, without reflecting on the fact that we are already laughing at our "certainties" the other day. Thus, that handful of deluded illusionists, instead of fighting to reveal the sense of surprise, of suspension of credibility, of healthy deceit for good, take refuge in the construction of useless Puzzles by sliding the supreme discipline in the limbo of things, considered in a derogatory way, "as children" (and maybe they were, they are just things for shamans.... without taking anything away from the category)

Chapter 9
Science, scientists and science communicators.

> "The intuitive mind is a sacred gift and the rational mind is a faithful servant. We have created a society that honors the servant and has forgotten the gift".
> Albert Einstein

In times, unfortunately suspect, we try to put order in a category of adjectives that are increasingly confusing, overlapping and even replacing each other.

Science is by definition doubt and not just the search for answers. Understanding, without keeping active curiosity, is destined to form dogmas and therefore absolutisms. To determine convictions that not always, indeed almost never, even if they seem so, are right and definitive answers, but that are often a pretext and justification to dictatorship. History must never be forgotten.

We all have certainties of astronomy when we then discover that the earth has two (and maybe three if not more) Moons.

But go? And instead it seems so.

We are convinced that we know the human body intimately, for having dissected it in every way and instead we discover that we have other unknown organs (two, but perhaps more than two) including the largest that you find place in the human structure, at least in the current state of knowledge.

Science, the true one, never ceases to be uncertain, but science and some self-styled scientists are very different things.

Science communicators are the same or worse.

Just a few days ago, one of those very famous for his appearances on TV, perhaps the most famous and accredited, said something in my opinion disturbing:

- To understand the world you have to open your mind, but not so much otherwise the brain falls to the ground.

Interpreting we could say: - Think, but limited. Do not try to go beyond what (WHO decides?) is permissible and plausible to think.
In the face of such learned discourses I would reformulate his own words paraphrasing them in: -To understand the world one must open the mind, but very very much, paying attention mainly to those who claim to limit its use by proposing pre organized answers and, especially to those who, with patronizing, is full of certainties.

Fluid intelligence is the ability to think logically and solve problems in new situations, regardless of the knowledge acquired. It is the ability to analyze new problems, identify underlying patterns and relationships to extrapolate a solution using logical reasoning. It is necessary that all logical, scientific, mathematical and technical problems are addressed

with the problem-solving procedure, adopting fluid thinking that includes both inductive and deductive reasoning.

Crystallized intelligence (GC) is the ability to use skills, knowledge, and experience.
That’s it.

Chapter 10
Spectators and Magical Experiences

A separate chapter is necessary to clarify the reason for the choice of certain viewers and how to prepare them to live the magical experience.

Aroused in me particular interest (with consequent amazement for the results obtained) a singular activity fielded by a group that took the name of Improv Everywhere and which was called Magic experience design.
(told brilliantly in the book "The art of Amaze" by M. Tomatis and F. Buscema)

It was about organizing and implementing a kind of sophisticated candid camera where, however, the ultimate goal was to make live, even to one person, an unexpected magical experience.

Of course the results were exciting. The power of having lived that experience directly, unleashed, in the "victims", unrepeatable happiness and emotions.

(you can also find several videos of these experiences on You tube)

In this practice I have identified two points that can be important and very useful to the experimentation that we are going to produce.

The magic effect, in some cases, takes place without the direct intervention and mediation of the "magician". So regardless of the ability of an operator, but more simply because a series of actions fielded by the subject involved, make possible the enchantment (or at least this is the perception).

Second, the subject of experience is left free to live the emotions without having to recognize the illusionist's entertainment skills.

We will see if practicing magic in this way will give us more chances to understand the quality and amount of sensations experienced by the person involved.

I would also like to motivate the choice of the types of subjects to be involved.

In contemporary society, feigned disillusioned, attracted by the virtual, addicted to the false belief of knowing for "having felt", illusionism was relegated to a ghetto, illusionists caged in a role of pure entertainment, therefore without any luster for the art of which they are depositaries.

It is undeniable that this path has generated a feeling of unease in the audience of magic shows in the face of what they consider to be trickery.

Therefore, in order to have a response that deviates from this paternalistic attitude, we will try to carry out our analysis on people as possible without mental superstructures that act in this sense on thought.

Children, unfortunately, are not very useful subjects because, educated more and more to maturity, do not recognize the surprise an absolute role, but almost always interpret it as a challenge to what they consider intelligence.

They react immediately by superimposing illusion on makeup and confusingly seeking a justification that doesn't make them feel stupid

If they are too small, it will be difficult to obtain useful data.

What seems to me to be the most valid sample is formed by boys down and suffering from autism not too serious.

People who have not developed superstructures and irremovable beliefs.

As much attention will have to be paid to some characteristics of the experience to be proposed.

What we need to pay attention to is not to anticipate what kind of experience they are going to have.

If those who enter the room know that they have to witness a magic trick presented by an illusionist, they will have a conscious approach of the prodigy and therefore, perhaps, less emotional.

In the case of an event that happens without the apparent intervention of an external operator, the emotional part, in my opinion, will be amplified. We will see.

We must also refer to the nomenclature of the theatrical performance, staging a "drama".
Let me explain:
Drama is a story that happens in real time. Sleight of hand is just as much.
The sleight of hand, the support of a story, takes place but in an epic time.
The performance takes place "despite". The performance is a vital act of transmission to pass on social knowledge, memory and sense of identity.
Handing down is the key word.
Tradition versus modernity.
What our work should aim at is to bring back as much as possible the show as if it were - Hic et nuc - in an attempt to understand what generates emotions.

Chapter 11
Finally, a bit of everything.

If you can't feel wonder you're dead
Albert Einstein

It seems strange that many of the quotations summarized in our research are by Albert Einstein; we would not like to seem presumptuous and bring, albeit minimally, our intuitions closer to his. For goodness sake! But what definitely binds our world to his way of thinking is the continuous, maniacal attention to free thought. The absolute conviction that an irreplaceable part of human thought in the act of giving life to an embryo of rationality, is pure fantasy, abstraction.
The lack of this moment that today is considered ONLY playful, generates monsters.
In our opinion, this is what Goya meant when he formulated the name of his work, which he titled: The sleep of reason generates monsters.
Most likely the "reason" he was referring to was what we now call creativity.
It is called "drift syndrome", the inability to enjoy what surrounds us, that is, the inability to amaze us and to be amazed by the things that we have around us: the sunset, the flowers, the sea, a starry sky, a walk in nature, a happy moment linked to a meeting, a word, the enjoyment of an artistic fact, listening to music.
Research has shown that compared to the 60's 47.8% of Italians are no longer able to get excited about small joys.
Happiness is a feeling of direct descent of a surprise.
The verb to be surprised, according to the etymology, means "to react to something unexpected": the amazement activates in the brain the attention system, assigned to look for resources to manage an unexpected event. It stimulates the cognitive functions, to establish a link between the surprising fact and what you knew, and makes you learn something new.

Amazement diminishes with age. From 100% of children three weeks of life up to close to 0% of the man intent on seeking social affirmation, or the realization of a minimum wage, both situations generating stress.

One seeks happiness elsewhere without knowing where and ignores having it in wonder. We consider the magic things for children while it is undoubted and proven that they are the secret of life and their emotions.
You don't want to understand, even if it's all so simple, that the human body is not TOUT COURT chemistry, but emotion-induced chemistry. Proteins, cytokines are produced PRIMARILY by situations that generate emotions. We can continue to think that it is essential to introduce drugs into our body or learn (or rather learn) to use what nature has put at our disposal.

Returning to the children, in-depth studies of a few years ago, found that on average 76% were surprised at extraordinary events, but that this percentage has fallen in recent years. For this reason, our screening will start from the response that can give to the emotion experienced by a game of illusionism of the "simple" minds, that is, as far as possible absent from superstructures .

Bibliografia

Il briccone divino. La saga di una singolare divinità fallica degli indiani Winnebago.
Paul Radin – Carl Gustav Jung – Karl Kerènyi
Nuono portico Bompiani – 1979

Il cervello è più grande del cielo.
Giulio Maira
Solferino – 2019

Della gentilezza e del coraggio.
Gianrico Carofiglio
Feltrinelli – 2020

Performance, politica e memoria culturale
Diana Taylor
Artemide – 2019

L'arte di stupire.
Mariano Tomatis – Ferdinando Buscema
Sperling & Kupfer – 2014

L'esperienza della magia.
Eugene Burger
Florance art edizioni – 2007 - ed.or.1989

Magnetismo animale e magia
Arthur Schopenhauer
Est – 1994

La città come aula.
Mc Luan/Hutchon
Armando - 1984

La creazione Magica
Pavel
Pavel Magic – 2005

Giù la maschera
P. Ekman – W. Friesen
Giunti - 2003

Un indovino mi disse
Tiziano Tersani
Longanesi – 1995

Lo Zen e l'arte della manutenzione della motocicletta
Robert M. Pirsing
Adelphi 1983

Funded by the
Erasmus+ Programme
of the European Union

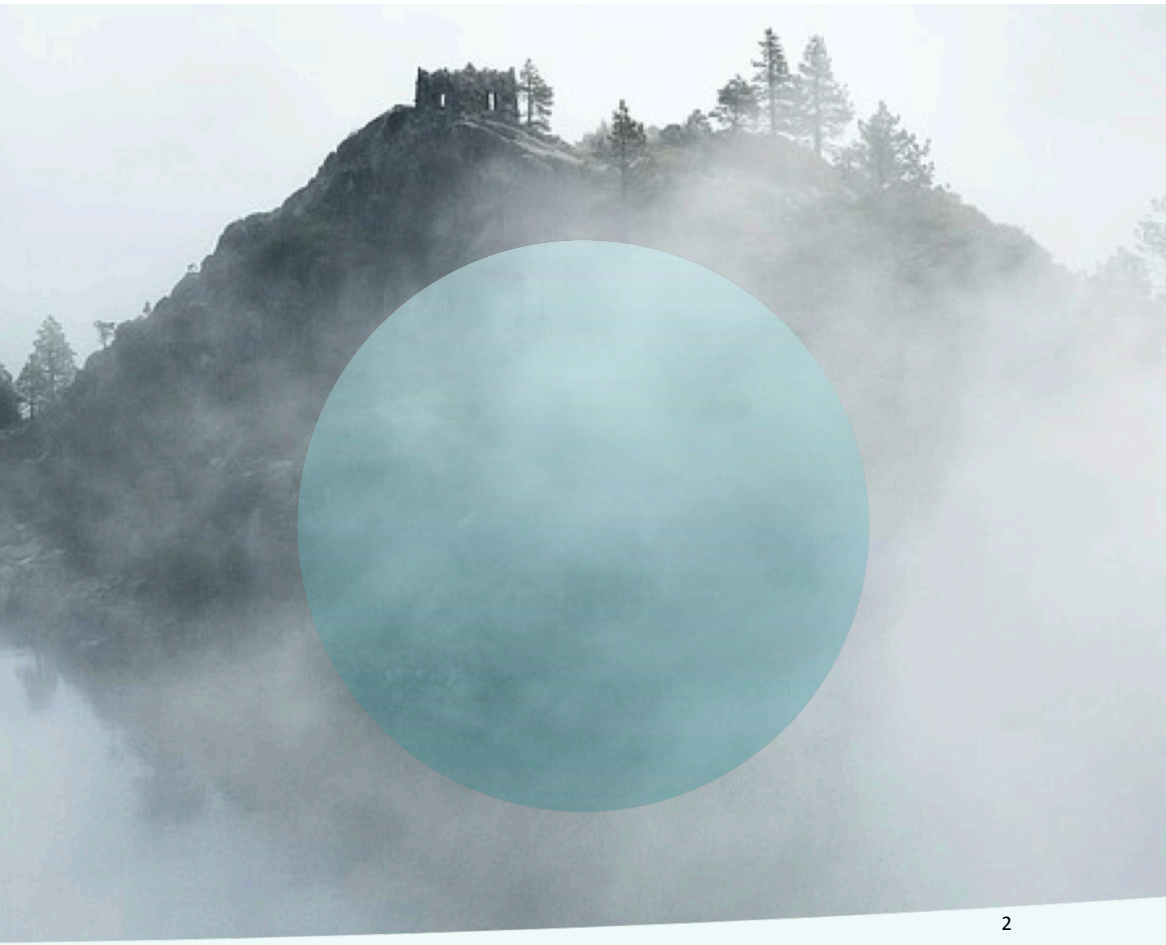
«**Project Reference : 2020-1-IT02-KA227-SCH-094850**»
Programme Erasmus+ key action 2 "Strategic Partnership"

A REPORT ON MAGIC AND ILLUSION IN EDUCATION

from the Polish perspective

Material developed by CRAS-Association (CRAS - Centrum Rozwoju Aktywności Społecznej)
as part of the project: “We need illusions more than reality”

Table of contents:



1. Magic and illusion – a few words

The terms "magic" and "illusion" are very often used synonymously in colloquial language. However, the analysis of dictionary definitions shows a significant conceptual difference between these two words. According to the Dictionary of the Polish Language, the word "magic" has three meanings[1]:

a) "overall beliefs and practices based on the belief in the existence of supernatural powers, which can be mastered and called upon by means of spells, rituals, and witchcraft",

b) "„extraordinary force of impact",

c) "compelling charm of some places or people".

The first of the quoted meanings strictly refers to the conceptual meaning, i.e. reflecting the feature of a given occurrence, the dimension of knowledge about it.

The other two meanings have a metaphorical and even hyperbolic dimension and are used in statements that strongly emphasize the emotional dimension of a described occurrence, situation, person; for example, a "magic place" is a place that evokes positive feelings, associations. "The Magic of Christmas" is a term for a whole range of emotions that appear in connection with the celebration of Christmas. "Magic Eyes" is a phrase frequently used to express admiration for the beauty of the eyes, usually female eyes, highlighted by selecting makeup. Examples of metaphorical and hyperbolic uses of the word "magic" are endless.

From the point of view of these considerations, the most important for us is the first meaning of the word *magic*, which directs us to a non-real dimension. In the area of occurrences whose failure to fit in with understandable mechanisms or the range of their knowledge causes the recipient–observer to try to explain them with something beyond rational, assigning their occurrence to activities of undefined forces.

The word "illusion", as defined in the *Dictionary of the Polish Language,* also has three meanings[2]:

a) "an impression that you can see something that in fact is not there,"

b) "a belief in something or someone, or a belief about something that is non-compliant with reality,"

c) "a deformed vision or misinterpretation of something when influenced by strong emotions."

The quoted meanings of the word ''illusion'' relate to the realm of the senses. They focus on a discrepancy between reality and its reception by the senses. Synonyms of the word "illusion" include words like: 'delusion', 'mirage', 'vision', 'hallucination'. These expressions directly indicate the

[1] https://sjp.pwn.pl/slowniki/magia.html; (dostęp: 11.2021)
[2] https://sjp.pwn.pl/slowniki/iluzja.html; (dostęp: 11.2021)

incorrect perception of a given occurrence or situation by the human senses, which is simultaneously inconsistent with the actual state.

A brief analysis of the meanings of these two words – "magic" and "illusion", shows that they refer to completely different cognitive areas. Why is it, then, that in common consciousness they appear next to each other and are used interchangeably, often as synonyms? As can be seen from the cited definitions, this assumption is semantically incorrect.

Perhaps the answer to this question is very prosaic. Magic, understood as a belief in supernatural powers, forces beyond the natural and physical, is an illusion, an illusion that has no basis in reality. Every occurrence and object that takes place in nature can be described by forces described in scientific laws – in physics, mathematics, chemistry, biology, and other sciences. This means that supernatural powers do not exist, neither do witchcraft nor spells. However, the ones that function are the laws of physics, aerodynamics and biochemistry. But in order to understand the real essence of a given occurrence, it is necessary to know these dependencies of natural sciences. Perhaps subconsciously, by combining the two words *magic* and *illusion* into a pair, as humanity, we assigned a meaningful expression to this truth. There are no supernatural, magical occurrences or phenomena. They are an illusion of the senses, resulting from a lack of consciousness and knowledge about the mechanism of a natural process which is incomprehensible, and for that reason understood as magical.

The conclusion of the considerations named above comes down to the statement that KNOWLEDGE is the key that closes the world of magic and dispels any illusions in the recipient about the surrounding occurrences.

However, at this point comes the question: *why are magic* and a *magical perception of the world* so popular and deeply rooted in the human consciousness all over the globe?

A cursory glance at the history of humanity shows that magic, understood as "belief in supernatural powers," is much older than science. And that actually is the answer to the question. The magic of the world appeared to be filling a gap, which was the lack of scientific knowledge about the world and its processes.

The practice of giving a magical dimension to natural occurrences appeared at the beginning of human history. The best example of this was the deification of the powers of nature, giving them divine features and worshiping them. The main example of this mechanism is lightning – a phenomenon of one of the elements of nature, an atmospheric discharge that is equivalent to electromagnetic reaction. Among primitive humans, it caused fear and fright. As it was an occurrence incomprehensible to humans (they lacked the knowledge that would explain the essence of it), it started to be considered a magical element, an effect of the action of some unknown supernatural forces.

Beginning with the example of lightning, it is easier for us to understand the genesis of the divinity of the elements. Looking at pantheons from various cultures, in the main places we find divinities identified with the forces of nature, according to the believers, who control the elements. In almost every culture, various divinities were led by a god who controlled lightning, which means the destructive element of fire – and so, for example, it was the Greek Zeus, Latin Jupiter, Norse Thor, Slavic Perun, or Hindu Indra. Nature, its elements, the control over them and the attempts to tame them, are at the core of all primitive religions. The bond between the world of ordinary people and the magical world of gods consisted of the priests, who performed cultic rituals in a mysterious atmosphere. It is these people who are considered to be the first illusionists. Priests and shamans in order to convince the followers about the truth of their calling, their possession of magic skills and the effectiveness of contacts with external forces, used various types of tricks, such as using their knowledge of nature, acquired either during learning or during the observation of the natural environment. A frequent example of such a trick, through which ancient priests ruled the minds of subjected people, was the solar eclipse. Thanks to astronomical observations, the priests were able to calculate the time of an eclipse and use that day to organize a public performance, during which the eclipse was presented as the wrath of gods and them turning away from the ungodly. The occurrence of an eclipse was used to spread fear and panic, in order for the priests to *save* humanity because it was supposedly thanks to their prayers and the power to influence the divinities that they quelled their anger and restored the sun to the earth. This is a typical example of the use of the advantage of knowledge to gain and maintain power over those who don't have it and at the same time building a magical image of the world, one that is dependent on so-called supernatural forces.

The first historically mentioned illusionist, who used the art of illusion for entertainment purposes, is considered to be the Egyptian Dedi, mentioned in sources from around. 2 700 BC. According to these notes, Dedi presented to the Pharaoh the trick of cutting off the head of an animal (goose, pelican, ox), and then reattaching it to the rest of the body, after which the animal was alive and well (doesn't this remind us of that popular trick of cutting a human into two parts?). The later popularity of different types of magicians, wizards, clairvoyants and alchemists was comparable to that of modern celebrities, regardless of the state. People who practiced "magic", claiming to know the secrets of the world, control the elements, have the ability to turn base metal into gold, or have cures for all diseases, were very eagerly hosted at the royal and noble courts. On the other hand, taverns and streets were full of different types of wandering jugglers and swindlers, who fooled people with various tricks to gain profit. The great popularity of both magicians and illusionists was due to one simple reason. People were (and in some sense still are) hungry for an explanation of surrounding occurrences that are beyond the scope of their knowledge. This, however, comes from insecurity. The unknown and incomprehensible causes fear and fright. Human

psychology is constructed in a way that makes the human strive to achieve a state of safety and to eliminate threats. Therefore, if something is incomprehensible – e.g., the formation of lightning, people attempt to explained it in every possible way – e.g., divine intervention, supernatural forces, or simply magic. This mechanism was used by illusionists of various types – from the likes of divinity priests to street performers. Illusion and deception of the senses of people who lacked elementary knowledge on a given topic gave a false sense of security of the possibility to control the elements of nature, time, or death, e.g., spiritualist sessions and the possibility of *calling up* spirits. In some sense, an illusion and the way it referred to magic, indicated a so-called short cut, which means it gave hope of achieving something without putting in much effort, work or dedication (e.g. getting rich without the need to work thanks to a philosopher's stone changing common metals into precious metals; acquiring knowledge without learning thanks to magic spells; the ability of a machine to constantly work, without the necessity to draw energy from the outside, the so-called perpetual motion machine; fast recovery from multiple diseases thanks to "miraculous" elixirs – these are just a few of the examples illustrating the striving towards a goal through the use of non-natural forces). Simultaneously, apart from the negative dimension of illusion, which is undeniably the case when it comes to the deception of human senses, the activity of illusionists also had a positive dimension. Paradoxically, it was the illusionists, magicians, and different types of magic experimenters who contributed to the development of science. Striving towards the improvement of their practice and the development of new *tricks,* they searched for new technical and construction solutions, which were precursors of inventions and technical solutions that are frequently used today[3].

As humanity, our culture shows how deep we are rooted in the world of magic and, in some sense, we desire it. All across the world, the culture and its material products (in the form of literary works, paintings, theatrical and musical works) are full of references to magic and to an illusionary, unreal world, filled with unreal beings, places, or objects. It is enough to quote probably the most famous European novel of this sort, which is "The Master and Margarita" by M. Bulgakov, or a more modern series that is popular mainly among young people, the saga about a young pupil of a School of Magic and Wizardry, Harry Potter by J. K. Rowling.

[3] Mecwaldowski J., Jak Pan To Robi?, Wydawnictwo: Łódzki Dom Kultury KKI 1998, s. 6 – 65.

2. What links magic to education? The influence of emotions in relation to cognitive processes

As mentioned in the first chapter of this study, the magic of the world and the attempt to explain incomprehensible occurrences with the activity of supernatural powers was an effect of a lack of knowledge about them. Humanity, in an attempt to build an emotional sense of security, strived towards the elimination of threats from the surrounding world. During the process of learning the mechanisms and the laws of nature, two pathways have emerged: cognition, which is gaining knowledge and discovering the laws of physics, chemistry, biology, and other sciences, and on the other hand, the belief in *supernatural forces* that rule the world or its aspects. Both of these pathways have one element in common: EMOTIONS. Emotions are produced in the cognitive process and also at different stages of various life experiences or natural occurrences (e.g. during a storm). Human emotions are a system of feelings. They are considered a subjective component, which causes physiological stimulation, along with a specific expression and behavioural changes[4].

The curiosity about the world that every person is equipped with leads to willingness to learn and the gaining of knowledge about what surrounds him. The development of humanity has led to the popularization of the education system, which is a systematic form of transferring knowledge onto the next generations of young people in the process of education. The process of education itself is a sequence of conscious and purposeful activities of the teacher and the students[5]. It requires the involvement of both the teacher, as the communicator of the curriculum content as well as the student, who is the recipient of this content. The main goals of the education process come down to four tasks[6]:

1) mastering of the basic scientific knowledge by the students,

2) preparing the student for effective use of the scientific knowledge in practice,

3) the development of cognitive abilities of the student, which include thinking, memory, attention and imagination,

4) shaping the student's motivation, discovering his predispositions and developing his interests.

However, it is necessary to remember that the learning process begins before entering a formal education system. In practice, the learning process begins with the birth of a human being. The moment he begins to get to know the reality that surrounds him is the first step to education.

[4] https://encyklopedia.pwn.pl/haslo/emocja;3897800.html; (dostęp: 11.2021)

[5] ~~*Nowoczesne metody dydaktyczne w*~~*procesie kształcenia*, praca zbiorowa pod red. dr K. Czekaj-Kotyni, Inst[illegible] Nauk Społeczno-Ekonomicznych sp. z o.o., Łódź 2013, s. 11

Cognition, on the other hand, is possible thanks to the functions of the human brain, which develops with age. Emotions are the catalyst in the process of gaining knowledge.

In the literature, we can find various definitions of emotions. In the basic sense, emotions are understood as "a strong feeling (conscious or unconscious) of a positive nature (under the influence of happiness, delight, fulfilment) or of a negative nature (under the influence of anger, disgust, fear). They are broadly defined as complex sets of changes including physiological stimulation, neurochemical processes, cognitive evaluation, the feelings, and behaviours experienced. They are a response to situations that are considered important to a given person"[7]. Emotions are described with features similar to vectors, known from mathematical sciences, i.e. emotions have:

– a sign (they can be positive or negative),

– intensity (they can be weak or strong),

– content (there is always an object of emotion)[8].

According to the psychological classification, there are six basic types of emotions: fear, anger, sadness, joy, disgust and surprise. They are universal, experienced, and recognized by all people in the world, regardless of the culture they grew up in and in which they were shaped[9]. This classification was proposed by Dr. Paul Ekman, professor of psychology at New York University, based on many years of research conducted on representatives of various social and cultural groups.

Emotions accompany the process of getting to know the world. It can even be stated that cognition begins with emotions. It is curiosity, interest, fascination – in one word, emotions, which are the source of cognition. The questions "why?", "how does it work?", "how is it made?", "where does it come from?", which arise under the influence of the emotions of curiosity, delight and surprise, generate the need to seek answers, that is, to acquire knowledge.

A different mechanism applies to the world of magic. There is a term in psychology called *magicalthinking*. It is assumed that it is based on the ability to generate new ideas. *Magical thinking* is one of the natural stages of the development of human thinking, estimated at around three to seven years of age. This process is characterized, among others, by children giving the features of people and animals to objects (animism), equipping animals with features typical of humans (anthropomorphism), and searching for causal explanations of all processes in the surrounding world (artificialism). Magical thinking is characterized by the belief that mental processes have the power to influence real objects and events. There is an assumption in magical thinking according to which a thought or its external manifestation (gesture, word) can cause physical and chemical effects. This

[7] Rawski M., Prezentacja: *Wpływ emocji na zachowanie uczniów i nauczycieli*, s. 3-4; https://www.wodnskierniewice.eu/images/pliki/wmo/40/6_wplyw_emocji.pdf; (dostęp: 11.2021)
[8] Ibid. s. 3-4
[9] Ekman P., *Emocje ujawnione. Odkryj, co ludzie chcą przed Tobą zataić i dowiedz się czegoś więcej o sobie*, Wydawnictwo Helion S.A., Gliwice 2012, s. 19-34.

mechanism explains the topic of the original understanding of the laws of nature in a magical way, discussed in the first chapter of this study. Magical thinking at the stage of adulthood is characteristic for primitive people (with a primitive view of the world), uneducated people (with a lack of basic science knowledge) and disturbed or sick people. One of the sources of magical thinking is fear or fright, for example in the case of a threat of danger to health or life, that could lead to suffering, loss, etc. In such situations referring to magical processes and activities is aimed at ensuring safety and aid (at this point I will recall the previously mentioned magical practices and rituals to tame the elements). The power of emotions in extreme situations experienced by a person is so great that knowledge and experience are suspended, with the simultaneous emergence of contradictory judgments. It is in those situations that very often non-scientific methods and solutions are used, which affect the imagination, increasing hope and providing apparent safety.

Magical thinking, apart from the dangerous directions it can take, also has a positive impact on human development. The occurrence of this sort of thinking might be conditioned by the remaining features of childhood magical thinking and the authority of significant people in this period. In childhood "magic" truths are learned indiscriminately, in strong emotional relations with the people from whom they were received.

On the other hand, in extreme situations, it acts as a mechanism that reduces anxiety or increases the sense of strength and the ability to influence the surrounding reality. It can be a personality defence mechanism in coping with anxiety-producing situations[10].

Both the emotions that occur when exploring the world, which are the source and driving force behind the search for knowledge, and the magical thinking that triggers creativity, should be included in the education process. Knowledge and imagination are the two wings that raised humanity to the achieved level of development. Thanks to them, even more can be achieved. It is important to make students aware of these unlimited possibilities throughout their education.

3. What is the influence of emotions on the ability to learn?

Searching through online forums and blogs for teachers and pedagogues, we can often come across information and tips for work, in which the need to link up teaching methods with the sphere of students' emotions is articulated in the main place. One such tip, included in an entry entitled:

[10] Samochowiec A., Samochowiec J., Wojciechowski B., *Rola myślenia magicznego w obronie przed lękiem*, Psychiatria 2004, tom 1, nr 1, Wydawnictwo Medyczne Via Medica, s. 17 -22.

"Emotions in the learning process: How do emotions affect learning?", stated: "for learning to be effective, not only the mind should be involved in it but also emotions, and the most effective way of acquiring knowledge is by experiencing." Under the influence of positive emotions such as pride, joy, and contentment, our memory, focus and thinking expand. Our brain becomes more creative and it solves the problems it faces with greater ease. Therefore, the atmosphere during learning is extremely important for the achievements of the student and the effectiveness of his work. Learning through play brings better results because what we learn accompanied by emotions (joy, enthusiasm, liveliness) will be permanently remembered in our memory. It has even been proven that the learning process requires the interaction of thoughts and emotions. If the centres in the brain that are responsible for feeling emotions were blocked, it would be impossible to make logical decisions. The teacher is responsible for how students feel during the lesson. The teacher should create conditions that enable the acquisition of knowledge (not serve it up to children "on a plate") and encourage them to search for information. It is important that the teacher asks the children questions during the class, allowing them to present their own thoughts. As a result of this, learning will proceed in the experimental mode, which will activate the appropriate structures in the brain[11].

The conclusion resulting from this statement indicates: the need for a holistic approach to the student; taking into account all dimensions of his personality during the process of education, treating him as a physical, mental and spiritual unity; taking care of each of these three spheres in the education process. Such an approach requires a lot from the teacher – primarily, the knowledge of biological processes occurring in the human body and the ability to translate this knowledge into the teaching process, with particular emphasis on the emotions that are turned on and released in this process. As the author of the quoted entry noted, the teaching process could not possibly be detached from the emotional sphere. All participants of the process, from pedagogues, teachers to parents, guardians and students, should be made aware of this key dependence. This is probably one of the most important tasks facing the people who create the education system at all its levels and in all its aspects.

The role and importance of emotions in the cognitive process is nowadays more and more often emphasized to the parents who are the first teachers and guides of their children around the world. "Emotions help us learn throughout life" – this sentence was found on one of the blogs for parents, in an entry entitled *"Emotions in learning – how to effectively teach children and more,"* it states the essence of defining the influence of emotions on cognitive processes. Later in his article, its author quotes the thought of a German neurobiologist, Dr. Gerald Hüther, who names emotions "The best fertilizer for the neural network" emphasizing that what a child learns in a state of the highest

[11] https://earlystage.pl/blog/2021/05/06/emocje-w-procesie-uczenia-sie-ja-emocje-wplywaja-na-nauke/ ; (dostęp: 11.2021)

excitement or delight will be permanently stored in his memory. It is this state of emotional stimulation that he calls the "neurotransmitter shower." Why is this happening? The answer to this question is provided by knowledge in the field of neurobiology, which is given in a very accessible (although of course shortened) way by the author of the quoted blog: “The amygdala, which is responsible for emotions in our brain, is inseparably linked with the hippocampus, which is responsible for memory. Therefore, the more one centre is stimulated, the better the other works. The more emotions, the better the memory. On the other hand, emotions are generated by experiences on which the neural connections in the brain depend.” This very simply presented dependence illustrates the process of knowledge absorption by the human brain. Dr. Hüther, cited earlier, also explains in a clear and very specific way the mechanism that governs children's knowledge acquisition in relation to emotions: “every normal child is interested in the world around them and each is happy to find someone who wants to explain this world to him. But the desire to explore the world quickly disappears when someone tells the child: You have to!” This statement is the essence of what the approach to the education process should be. Science will not be effective if it is oppressive. Compulsion simply kills the will to develop and curiosity, and thus the ability to acquire knowledge. This is because it evokes negative emotions related to fear and anxiety, which in turn are the source of the body's reactions involving blocking, avoiding, withdrawing and running away. Such feelings should not accompany the student in the cognitive process, because they limit and block their possibilities, and as Dr. Hüther emphasizes: “each child is different and unique, and each has a potential that we do not even suspect. For the potential to develop, a child needs role models, a sense of belonging and security, and to constantly face new challenges. Anything that happens as a result of pressure, stress or fear has a negative impact on his development.”

Beginning from the quoted observation, the author of the blog puts forward his own thesis that “a joyful brain remembers better”. Later in the article, he suggests that positive emotions should be evoked in every activity with a child. It is good to play with a child because by nature children are joyful, happy and curious about the world. He also asks a question: ”how is it possible that a child who is born so curious about the world suddenly becomes an apathetic student who hates any form of learning?” He immediately answers this question, pointing to the so-called *sins of the adults* – teachers, pedagogues and guardians – committed in the process of educating children and young people, including primarily: coercion, boredom and the lack of purpose of the task[12]. As is quite easy to guess, based on the considerations so far, the cause of educational failures are negative emotions that appear in the education process.

[12] https://www.madrybobas.pl/2018/07/emocje-w-nauce-czyli-jak-efektywnie.html; (dostęp: 11.2021)

After analysing the thoughts and statements quoted above, a question arises. Why are emotions so important in the cognitive process – not only of children and teenagers but people in general?

The first answer to this question relates to the purely biological sphere, which has already been mentioned in this study. The brain is responsible for the direct connection between emotions and cognition. The amygdala found inside the brain, the centre which controls emotions, is strongly connected to the hippocampus, the sphere responsible for memory. When both of these centres are functioning properly, it is possible to learn new things effectively and efficiently. So when emotions are felt, the amygdala is stimulated. Stimulation of this site causes greater stimulation of the hippocampus. That is why the brain remembers much more when emotions are involved in addition to facts on their own[13].

Due to the fact that emotions influence cognitive processes, which results from the construction of the human brain, emotions can have different functions in these processes. The most frequently mentioned are[14]:

- orientation function – emotions provide information about objects,
- activation function – emotions provide the energy necessary to activate and perform different cognitive operations,
- "modulating" function – emotions provide the amount of energy that ensures optimal functioning of cognitive processes,
- metacognitive function – which is related to the orientation in its own cognitive processes, and the selection of procedures that may be the most effective in a given situation.

The features of emotions named above show the importance of the role they play inside the human body and in the processes taking place in it. Thanks to these functions, the special role of emotions was noticed and emphasized. Therefore, more and more space is devoted to the issues of emotions, both those of students and of teachers, that go along with the education process. There are three main reasons why emotions play such a role in education:

a) emotions influence the student's interests, achievements and commitment to the learning process,

b) emotions support the individual development process of children and adolescents, constituting a central element of their mental health and well-being,

c) emotions experienced by teachers in a classroom are a central factor in shaping their professional activity.

[13] Rawski M. op.cit, s. 18.

[14] Lubina E. *Rola emocji w procesie kształcenia na odległość*, E-mentor, nr 3 (10)/2005, http://www.e-mentor.edu.pl/artykul/index/numer/10/id/161; (dostęp: 11.2021)

A very valuable observation is the statement that in the process of education, emotions are like a filter that determines what information will be accepted and memorized. This happens because emotions cannot be separated from cognition and learning. It is the emotions that determine how information is interpreted and stored, in other words, what their emotional charge is.

Unfortunately, a big problem and limitation in the formalized education system is the lack of encouragement both for students and for teachers to consciously practice the ability to recognize and name their own affective states.

And the emotions that appear in the teaching process concern both sides – the student and the teacher.

One of the research areas concerning emotions in the education process is the analysis of the feelings experienced by the student during learning. Professor Reinhard Pekrun in the early 2000s proposed the concept of a socio-cognitive model in which he defined the so-called achievement emotions, described as emotions directly related to cognitive activity or its effects.

In this model, the emotions of achievement relate not only to the end result of learning but also to the process of achieving it (e.g. excitement increasing along with learning or becoming proficient, boredom when listening to instructions, or anger when the task is obstructed).

Taking into account the object of the emotion (focused on the process or the result), the value of the emotion (positive vs. negative) and the level of activation, a three-dimensional division of achievement emotions was distinguished:

a) the positive emotions related to activation include play (oriented to the process) or joy, hope, pride and gratitude (oriented to the result), while the positive emotions related to deactivation are relaxation (oriented to the process) or satisfaction and relief (oriented to the result),

b) negative emotions associated with a high level of stimulation are anger and frustration (oriented to the process) and anxiety, shame and anger (oriented to the result). However, negative emotions related to low activation levels are boredom (oriented to the process) or sadness, disappointment and hopelessness (oriented to the result).

In practice, this means that the joy of learning can take many forms, ranging from excitement to an emerging challenge, to a state of relaxation when a routine task is performed. When the learning process is under the subjective control of the student, but its final effect is judged negatively – the student experiences anger. Mainly because the expected effect does not satisfy him. On the other hand, if the learning process is judged positively, but the student has no control over it, and the existing obstacles do not guarantee success, the student experiences frustration. Ultimately, when a learning activity is valued neither positively nor negatively, it leads to boredom. Boredom arises when there are too low and too high demands placed on the student in the learning process.

The consequences of the emergence of achievement emotions during learning:

a) achievement emotions have an influence on the quality of the student's engagement and learning outcomes,

b) achievement emotions affect the use of the student's cognitive resources, motivation, choice and effectiveness of learning strategies, as well as the location of a sense of control over the process of acquiring new information and school skills (external vs. internal).

The conclusion resulting from the use of such a model confirms that emotions are an integral part of the educational process, closely related to cognitive processes, and should never be treated as a side effect of the learning process.

The aspect related to the teacher's emotions is as important as the emotional aspect of the recipient of the process, in other words, the student. The teacher, just like the student, is the centre of the educational process. His role is, in a way, a driving force because it is the teacher who is the messenger of the knowledge, the mentor, and the guide for the student. And as a person, he experiences a whole range of emotions and feelings that accompany him in his professional work – which is education. Therefore, the teacher's emotions experienced in the classroom are a key factor influencing his professional activity. The feelings he encounters affect his practical skills in the field of transferred knowledge, professional development of cooperation between students, and contribute to his personal development and well-being in a similar way as emotions influence the learning effects and the student's well-being.

Classroom teachers experience a wide variety of emotions depending on how they interpret and judge student behaviour. The individual emotions of a teacher, which are his emotions, depend on the mutual relations between his cognitive processes (such as evaluations, opinions, judgments), and his behaviour. In many cases, students are aware that they can influence the teacher's experience of positive and negative emotions. The most common source of positive emotions in a teacher's work are interactions with students: observing the way they learn and make progress, especially when they have difficulty at the beginning. The more positive emotions in the relationships with students, the more often teachers spend time with them and organize extracurricular activities. Teachers also experience positive emotions when they manage to implement their own plans and intentions in the lesson, when they experience support from colleagues, and when parents accept the teacher's grades and support their effort. The teacher's emotions, such as joy, satisfaction or pride, influence positively both the students and the effectiveness of the teacher's work.

The emotional condition of the teacher has a direct impact on his students. Students who observe positive feelings and good mood in a teacher during a lesson are more likely to carry out the tasks assigned to them and less often apply avoidance strategies during learning. Emotional interaction works both ways, i.e. teachers who experience more positive emotions while working are more constructive when teaching, have more creative ideas, are better at interpersonal relations

with the students, and use more effective ways to reduce everyday school stress. Negative emotions also influence the effectiveness of teaching. Teachers most often experience anger and frustration when the attempt to achieve designated goals is blocked. This usually happens when students violate rules, have poor academic results, or behave in a way that is perceived by the teacher as uncontrollable (e.g. laziness, not willing to learn, lack of attention). Negative emotions are also experienced due to bad relationships with other teachers or lack of cooperation with parents. In traditional educational systems, there is still a mechanism in which the student's expression of negative emotions is unacceptable in the school environment, but a teacher's expression of anger and frustration is allowed. Moreover, many teachers believe that showing negative feelings helps them maintain discipline in the classroom and makes their work more effective.

In the model presented by Professor Pekrun, it was indicated that the emotions of students in the education process can be positively stimulated by strengthening their sense of competence and control over the learning process and its results, and by shaping a proper judgment of this activity and its effects. Among the postulated ways to achieve this goal, the following are mentioned:

a) care for the quality of cognitive instructions and requirements for the student. Tasks precisely defined, clear and adequate to the student's abilities evoke positive emotions regarding achievements and contribute to an increase in the sense of control over the learning process and positively valuing the process of learning and its effects,

b) stimulating motivation and shaping the value of the tasks carried out, both in the classroom and at home. Teachers and parents can "pass on" their enthusiasm for learning and positive academic results to the students.

c) shaping a supportive environment that favours learning and high academic achievement. This is done by learning autonomy and cooperation (individual vs. group learning). Allowing students to be independent while gaining new knowledge and skills supports their sense of competence, influences positively the process of valuing the tasks performed, and as a consequence evokes positive emotions[15].

The quoted considerations indicate that the relationship between emotions and the educational process is the subject of advanced research. This is not surprising given the importance of this issue. At the same time, it is pleasing that in such an important aspect of human life as education, further areas are explored and described, which have a direct impact on the quality and effectiveness of education. Those types of fields should be constantly developed and the conclusions obtained should be put into practice. The subject of education and teaching is essential because the future, which will

[15] Grzegorzewska I., *Emocje w procesie uczenia się i nauczania*, Teraźniejszość – Człowiek – Edukacja: kwartalnik myśli społeczno-pedagogicznej nr 1 (57)/2021, s. 39-48

be created by today's students, depends on the condition and effectiveness of the process of transferring knowledge.

4. Methods of education that use emotions in the teaching process – examples of magical classes

Many studies have been created and are currently being prepared about the condition of the formal education system, which show various aspects of it. In the available articles, studies, blogs, and the media, we can find multiple critical opinions, advice on how to improve something, information about the ineffectiveness of some methods or approaches. Critical opinions are important insofar as they indicate problematic areas that occur in the general education system. Diagnosis is the first step to improving something or setting the correct course of action. Education is a key element of human development. The possibility of acquiring knowledge determines conscious decision-making and shaping of the life path, in both the personal and professional dimensions. Therefore, the education process needs as much attention as possible and all available means and tools should be used in order to popularize, develop, modernize and raise it to a higher level.

The current level of technological development and the level of understanding of the dependencies and mechanisms occurring in the body, especially in the human psyche, enable effective teaching in a form which is attractive to the student, corresponding to his or her perception. Teachers play a special role in this process. It is dependent on their commitment, creativity and adaptability, as well as their willingness to learn, whether and what opportunities they will use, and in what way they will pass on their knowledge.

Without skipping critical opinions and being aware of the various problems that affect general education, it is worth focusing on the positive aspects and discovering innovative and creative teaching methods. And there is no lack of those at all. Being aware of the influence of emotions on the process of remembering and the fact that experience is the best form of learning, many pedagogues conduct their classes in a *magical* way, using curiosity and interest, stimulating the students and developing their imagination, introducing the so-called *wow effect*.

Various methods and tools are available today. Education can use the latest technology – from toys and interactive whiteboards through electronic devices to internet connections. The combination of various methods and tools makes learning attractive, full of inspiration and emotions – almost magical (in the sense of power and impact).

Below are some examples of *magical* teaching methods that confirm the observation quoted earlier that "a joyful brain remembers better":

1. Makey Makey – a mechatronic system that is gaining more and more popularity among teachers, which consists of a printed circuit board and a set of cables ended with so-called crocodile clips, which make it easy to attach to various elements (e.g. fruit) and a USB cable that allows the

board to be connected to a computer or tablet[16]. With the help of this small board, it is possible, for example, to play a melody on fruit or vegetables. In the description advertising this tool and encouraging teachers to use it in their work, we read: "This small board is able to make the children not want to go home, and at the same time they will activate their reserves of creativity, joy and willingness to cooperate. Many of them will discover IT, engineering, mathematics, music or art talent because this is what characterizes these classes. During the classes, students work by project. They learn by doing, which allows for versatile development, stimulating many senses, developing various interests, and combining them together. But the most important thing in all this seems to be that science becomes something practically useful, relevant in everyday life – without unnecessary rules and definitions. Clean operation and simultaneously an amazing dose of knowledge and skills"[17].

One of the teachers who used this device for the first time during a lesson described the reaction of the children when they could play on the bananas connected to the plate: "Wow! This is MAGIC!"[18]. The emotional pattern described earlier worked here – almost subconsciously the children described a phenomenon they did not understand as magic. It could be said that they somehow explained to themselves the unknown occurrence by the activity of *supernatural forces* – in this case, mechanisms of electrical conductivity yet unknown to them. Luckily their guide through the world of the magic of the Makey Makey board was a conscious teacher, in whom the children's reaction caused the following reflection: "Cool, I sparked enthusiasm and a spark of mystery, but this is not magic, this is SCIENCE! The science which allows these bananas to play, that lets you know how it happens and what makes bananas playable (...) when these kids were saying "wow magic" I thought to myself: no, no, no, I need to explain to them scientifically why these bananas play"[19].

[16] Apanasewicz J. *Poradnik i scenariusze dla kodujących nauczycieli i nauczycielek Makey Makey, „Zaprogramuj przyszłość"*, Warszawa 2018, s. 8.
[17] Ibid. s. 8
[18] https://www.edunews.pl/nowoczesna-edukacja/ict-w-edukacji/5389-makey-makey-magia-czy-nauka-o-co-chodzi-z-grajacymi-bananami Webinar, min. 5:10-7:08; (dostęp: 11.2021)
[19] Ibid.

Illustration1: Classes with the use of Makey Makey board

Source: https://www.edunews.pl/nowoczesna-edukacja/ict-w-edukacji/5389-makey-makey-magia-czy-nauka-o-co-chodzi-z-grajacymi-bananami

2. Lego bricks – popular all over the world, bricks with an almost unlimited number of applications in creative education, not only in the sciences related to building, design, etc. One of the very interesting uses of this tool was proposed in humanities lessons – the teacher built Lego figures of 126 of the greatest philosophers, including Polish Nobel laureate in the field of literature Olga Tokarczuk.

Illustration2: Educational aids – figures of philosophers made of Lego bricks

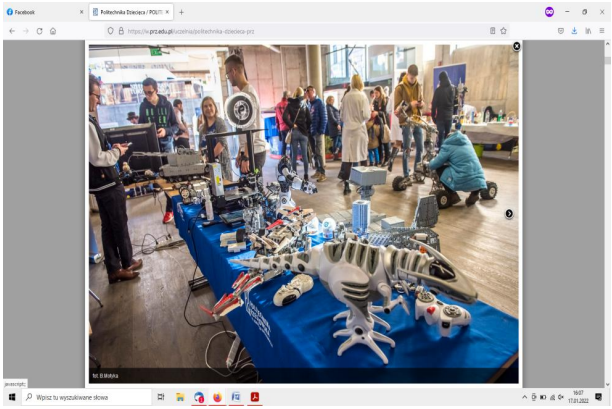
Source:
https://www.facebook.com/photo.php?fbid=10157227092561590&set=a.10151612808306590&type=3

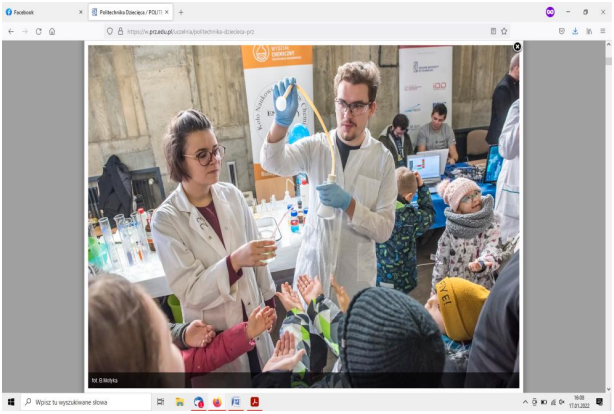
Illustration3: Educational aids – a figure of the Nobel Prize winner made of Lego bricks

Source:
https://www.facebook.com/photo.php?fbid=10157517833911590&set=a.10151612808306590&type=3

3. Learningby experimenting– demonstration activities for children both during lessons and in the form of additional classes (e.g. Children's University of Technology – a project carried out by the Rzeszów University of Technology). Fascinating, attractive, empirical – these are just a few adjectives describing these activities carried out by the method of experiment, that stimulate the imagination and are deeply remembered, and at the same time, they expand curiosity about the laws of physics, chemistry, and biology.

Illustration4: Experimental shows conductedduring the event called Children's University of Technology





Source: https://w.prz.edu.pl/uczelnia/politechnika-dzieciеca-prz

4. So-called "Living history lessons" – classes with the participation of reconstruction groups, lovers of promoting experimental history, which allow students to *travel in time* and stimulate their imagination, giving them the opportunity to feel the atmosphere of a given era, identify with heroes from the past.

Illustration5: History lessonswith the participation of reconstruction groups

Source: https://rekonstrukto.webs.com/apps/photos/

5. **Programming and robotics for children** – computer classes with the use of interactive tools, modern technologies or robots – e.g. the educational robot Photon – developing along with the child, teaching the basics of programming through play, showing the newest technologies and developing logical thinking and creativity.

Illustration6: Classes with the use of Photon – a robot for children of different ages

Source: https://photon.education/pl/zestaw-laboratoria-przyszlosci/

6. **Projects and programs dedicated to children and adolescents** – e.g. the University of Young Explorers – a program addressed to children and adolescents aged 6-16 years. As part of the program, scientists are expected to popularize the results of scientific research and develop an interest in science among program participants i.e. children.

Illustration7: Activities for Young Explorers

Source: http://www.ekoskop.rzeszow.pl/index.php/projekty/uniwersytet-rzeszowski-dla-mlodych-odkrywcow/190-uniwersytet-rzeszowski-dla-mlodych-odkrywcow

7. **Copernicus Science Centre** – a multidimensional scientific centre for children and adolescents based in Warsaw. It has been operating since 2010. It promotes an innovative approach

to popularizing science, organizes interesting events, exhibits, experiments, workshops, and prepares teaching materials for students and teachers. The mission of the Centre is expressed as: "We inspire to experience, understand the world and act responsibly." One of the information leaflets promoting the Centre describes its activities as follows: "Here, music goes hand in hand with biology and mathematics with architecture. Science enters the world of emotions, and even the visitors themselves can also become the subject of observation. Dear Parents! Let's learn from children how to experiment: engaging all the senses, without the slightest resistance, without shame about making a mistake. They have the natural ability to be true explorers."[20] The institution has even become an obligatory place for students from Polish schools, who can experience the power of science and ignite their passion for its various fields by visiting it.

Illustration8: The headquarters of the Copernicus Science Centre

Source: https://www.facebook.com/CentrumNaukiKopernik/photos/10158291124820178

[20] www.kopernik.org.pl; (dostęp: 11.2021)

These few examples do not exhaust all the possibilities that can be used in modern teaching methods at all levels of education. Nowadays, educational possibilities are practically unlimited. Interactive tools, gadgets, reconstruction groups, experiments, science centres, programs and communicators – all of this makes modern education magical. This is confirmed by the opinion of one Polish pedagogue, who follows the times and successfully uses various novelties in these lessons: "The use of these gadgets in class truly encourages to seek and deepen your knowledge on your own, to open your eyes to what is new and unknown, to gain new experiences and to be excited about what is good, beautiful and wise. In one sentence, it is effective and it gives rational results in the form of a fascination with science and the educational WOW effect"[21]. This statement summarizes the meaning of science – "to open your eyes to what is new and unknown, to gain new experiences and to be excited about what is good, beautiful and wise" is a task for teachers towards their students. The methods to achieve this goal are practically endless.

[21] https://staron.is/filozofia-obrona-przed-wspolczesna-czarna-magia/; (dostęp: 11.2021)

5. "Magic is the essenceof education"

At the end of this study, it is worth looking at one more dimension of magic in education. It is an extremely important one, and maybe even the most important because it relates not so much to the emotional sphere, but to the essence of humanity.

"Magic is the essence of education" – this is the title of the speeches at the TEDx forum (an initiative that brings together people and institutions that try to discover new ideas and share the latest research in their local areas, sparking discussions in various environments and communities) by Przemysław Staroń, Polish teacher and lecturer, a popularizer of the use of social media in education in Poland and the use of innovative educational methods and tools. In 2018, he was honoured with the title of the Teacher of the Year in a competition organized by the Ministry of National Education and the magazine called Głos Nauczycielski. Nominated for the Global Teacher Prize. He began his speech by presenting the thesis that "education should be magical". Referring to the most popular work of youth pop culture currently, the saga of the teenage wizard Harry Potter, he pointed out that the action of this book takes place in a school of magic. A school that children dream of being invited to. A model school. So he asked a question: why do we actually have a problem with children wanting to go to school? The answer was obvious: throw magic into schools! So he proposed the following project: "Let's make education magical! So that the student (after being shown something by the teacher) could say: WOW! This is great". Of course, he did not mean introducing magic into education at the level of witchcraft or explaining occurrences through the action of *supernatural forces*. The postulate of this pedagogue comes down to the statement that any knowledge can be shown magically, with interest, using the element of curiosity and surprise. A quote from his statement: "an experiment (simple, explainable by the laws of physics) but on the level of emotion it is magic, this is the wow effect". That is why it is so important to enliven the transferred knowledge so that it is cool, friendly and close to life. In this way, he expressed the truth around which the methodology of modern education focuses and constantly develops, that emotions play the main role in the teaching process and cannot be ignored in didactic work. The conclusion of his speech was both surprising and extremely simple. And in its simplicity, it affects the essence of not only education but most of all interpersonal relations, which are its basis. Mr. Staroń summed up his speech with the sentence: "love is the most powerful kind of magic!". Love in three dimensions: love for yourself, love for what you do, love for the people you work with. In this sense, he identified magic in education as love on the level of a relationship. An important element of his argument was also the obvious statement that you should start with yourself and look at yourself with love, understanding, and acceptance. "Yourself" in this case is understood as a teacher, a guide for others, the one who discovers and shows the world of knowledge to other people – his students. He

presented the reason for such an approach in a very clear way, saying: "in education, the teacher is the most important because only he can make the student most important!" This prioritization, in some sense, shows the real magic in education – shaping human-student by the teacher's attitude. He supported his position with short and concise arguments, taken from life and observation, saying: "If a teacher is frustrated, insecure, gets a low salary, has no possibility of supervision – the world tells him – "you are unimportant" – then how can he tell a young person – "You are important!" It's necessary to start with yourself – love yourself. These insecurities lead to ineffective methods of education, withdrawal of teachers, building authority through fear, or imitating an idol or a friend. You have to fill yourself with love – healthy, true, self-accepting. You have to start with yourself – without loving yourself – you cannot love others. It is the hurt who hurt, the humiliated who humiliate, and the betrayed who betray. Happy people do not need to hurt others." He ended his speech with an emotional message: "Teachers – love yourself and then you will not transfer your insecurities to those with whom you work. The second thing is to love the area in which you work. It does not matter what you teach, what matters is whether you put your heart into it." The conclusion of this speech was contained in the following statement: "Education should be magical, but with the assumption that the most powerful type of magic is love. Love which goes beyond itself goes to another person"[22].

On the surface, the quoted presentation might seem too emotional and referring to a dimension that is far away from the main topic of these considerations. However, this is not the case. In the quoted speech, the fundamental issue concerning interpersonal relations, at the student-teacher level, was raised and supported by substantive, not emotional arguments. The speaker drew attention to the most important element of the education process – the teacher, who together with the student creates its subjective dimension. In the process of developing new methods and educational tools to stimulate the student and increase the effectiveness of his learning thanks to the release and use of emotions, very often the importance of the teacher as a person is missing. The teacher is the one who has to use these tools and stimulate emotions. As Mr. Staroń reminded the audience in his speech, the teacher's emotions are equally important because they enable or disable effective learning and shape the attitudes of those who perceive them, i.e. students. In conclusion, trying to create a magical education system that uses emotions in the teaching process, it turns out that it is important not only to focus on the emotions of the recipients – students – but also to care for the well-being of teachers and support them in the process of conscious shaping and working on their own emotions – as people whose duty it is to teach other people. The importance of this aspect

[22] https://www.ted.com/talks/przemyslaw_staron_istota_edukacji_jest_magia_magic_is_the_essence_of_education; (dostęp: 11.2021)

is shown by the example of the mentioned speaker, who, having such enormous creative potential, used in his everyday activities, quit school and is not currently working as a teacher.

6. The magic of the future – summary

Summarizing the issues discussed in this study, it should be said that the world of magic, understood as the activity of supernatural forces, has been locked away with the key of knowledge that explains natural and technical occurrences. The fright and fear of the unknown have been eliminated by scientific discoveries explaining the mechanisms occurring around and inside a human being. However, the emotional aspect is extremely important, accompanying the magical understanding of the world since the beginning of time. Emotions are one of the constituent parts of a human being. In a way, modern science brings them back into favour. The development of knowledge, based on observations and research on the human emotional sphere, emphasizes its crucial impact on all processes in which a person participates, including the process of education and the ability to acquire knowledge. It is postulated that modern education should be *magical*, which means it should not only be based on strict facts and formulas, coercion and oppression, but that it should refer to and use positive emotions related to pleasant and intriguing experiences. The available tools and teaching methods, more and more creative and innovative, which refer to stimulating positive emotions are increasingly often promoted and are gaining supporters among teachers, especially those who treat their profession as a mission. The TEACHER is an element of the educational process that should be emphasized and given special attention. His emotions and awareness of them are crucial in the educational process because they have a direct impact on the students to whom he transfers knowledge and whom he shapes. Therefore, when developing teaching methods and tools and building the world of magical education, special attention should be drawn to educating future teachers and ensuring proper working conditions for people who already practice this profession. This is an extremely important postulate because it affects not only the well-being of a given professional group but above all, in the long term, influences the shape of the future of individual areas and the whole world, built by students leaving schools from under the guidance of specific teachers. It is the teachers who shape the students entrusted to them, and their words and actions often have a significant impact on the fate of these students. It could be a positive or a negative influence. This happens because the key to working with another person, in this case, a student, is RELATIONSHIP. It is a relationship that is not just contact, but should give a sense of acceptance and security, accompaniment and real presence, a sense of dependence on the person. This dimension of the relationship stimulates development and is also therapeutic and healing. In a relationship, it is important to share yourself, be authentic, honest and trustworthy. Relationships are the foundation of education, because education as a whole, the so-called hard things, the foundations of everything and all knowledge, are built on the emotional softness of the people who

participate in this process[23]. This is why it is so important that teachers consciously shape the school reality and only leave a positive mark on the lives of their students.

Summarizing the considerations on the role and influence of emotions in the education process, let's turn to one more teacher who, summing up his presentation on the influence of emotions on the behaviour of students and teachers, has developed a list of several points illustrating the emotions that occur in the student-teacher relationship[24]:

1) Emotions help us focus on important issues and respond to them accordingly, as well as express our emotions to other people.
2) Teachers who control their own emotions control the emotions of students in the classroom.
3) Teachers give students a signal that they are safe and that they can work freely. Every day we meet children, young people who enter our space, which is the classroom.
4) We [the teachers] are the hosts, but each lesson is dedicated to the students and would be pointless without them.
5) They [the students] are the participants and with their participation and commitment, we can act effectively.
6) Students learn from us how to cope with difficult situations.
7) We [the teachers] create a safe environment where the students can learn in a friendly atmosphere.
8) Mutual trust will be a permanent part of our relationship.
9) Students enjoy participating in lessons that they simply do not need to be afraid of.
10) In an atmosphere of mutual respect, [students] shape the world of their values.
11) Many students can be united by a smile.
12) A cheerful and sympathetic teacher can accomplish much more in a class than a teacher who is permanently dissatisfied, impatient, and with an authoritarian way of teaching.
13) Teachers who are an authority usually turn not to the entire group but to selected people, precisely defining the recipient of the message.
14) When negative emotions are shown towards a specific student and not the entire group, the message is more effective, and the teacher proves his perceptiveness to students/pupils because he knows who the actual cause of a given situation is.
15) Let's organize work with students, ensuring a good, friendly atmosphere.

[23] https://natemat.pl/379569,byl-nauczycielem-roku-we-wrzesniu-odszedl-ze-szkoly-dlaczego-zrezygnowal; (dostęp: 11.2021)
[24] M. Rawski, *op. cit.*, s. 40-42.

In conclusion, it could be argued that the next step on the path of educating people should be the expansion of emotional competencies, i.e. learning to name them, experiencing them, conscious work on them, and developing them. This way, as humanity, we will be able to enter the next stage of development – not only a rational and wise human but also conscious and aware of himself and others, an emotional and relational human being. Perhaps this will be a new kind of magic, this time not illusory, but real, caused by the action of natural forces resulting from the nature of a human being.

Bibliography

Publications:

1. *Nowoczesne metody dydaktyczne w procesie kształcenia*, praca zbiorowa pod red. dr K. Czekaj-Kotyni, Instytut Nauk Społeczno-Ekonomicznych sp. z o.o., Łódź 2013.

2. Apanasewicz J. *Poradnik i scenariusze dla kodujących nauczycieli i nauczycielek Makey Makey, „Zaprogramujprzyszłość"*, Warszawa 2018.

3. Ekman P., *Emocje ujawnione. Odkryj, co ludzie chcą przed Tobą zataić i dowiedz się czegoś więcejo sobie*, Wydawnictwo Helion S.A., Gliwice 2012.

4. Grzegorzewska I., *Emocje w procesie uczeniasię i nauczania*, Teraźniejszość – Człowiek – Edukacja: kwartalnik myśli społeczno-pedagogicznej nr 1 (57)/2021.

5. Mecwaldowski J., Jak Pan To Robi?, Wydawnictwo: Łódzki Dom Kultury KKI 1998.

6. Samochowiec A., Samochowiec J., Wojciechowski B., *Rola myślenia magicznego w obronie przed lękiem*, Psychiatria 2004, tom 1, nr 1, Wydawnictwo Medyczne Via Medica.

Internet sources:

1. https://www.edunews.pl
2. https://encyklopedia.pwn.pl
3. http://www.e-mentor.edu.pl
4. https://earlystage.pl/
5. https://www.madrybobas.pl
6. https://natemat.pl
7. https://rekonstrukto.webs.com
8. https://sjp.pwn.pl
9. https://www.ted.com
10. https://w.prz.edu.pl
11. https://www.wodnskierniewice.eu

Report on the application and testing of the WNIMTR method in Romania

1. Professional opinions of teachers and counselor

We have talked to a number of educators and teachers, as well as outside counselor with whom we have worked before.

CONIL teachers are used to dynamic and out-of-the-box teaching methods, as special needs education is a developing field which requires adaptive education. Teachers Mariana Ion, CezarinaPsatta, Simona Mocanu and Madalina Simion implemented the strategies devised by us and helped us with our research. The teachers were supportive of the methods, as they have confirmed with us that sparking curiosity is the most effective way of reaching a child when teaching.

It was very important to understand as well from the point of view of a counselor what magic in therapy is used for. Therapist Elena Neagu talked to us about the importance of the surprise element and stirring up curiosity, which we had already researched about. She mentioned that magic is a great way to bring out those emotions in children, and she explained why magic is great in therapy too.

"For each of us, childhood is the world of stories, of imagination. For children with special needs it is the same, a fairytale world in which they can transform, gain supernatural powers and become superheroes / This transposition into another world, into a character, into an imaginary situation, helps children to overcome anxiety, frustration, depression or diagnostic difficulties more easily.

Magical thoughts turn reality into an opportunity to develop personal skills, which they can use to solve problems. Skill development and solution plan constraint help with cognitive development and recovery from delays.

Because in magic everything is possible, the thought created by her gives a new face to reality, a tolerant and good face."

2. Difficulties in management and implementation

To start a conversation about the added value of magic in education was difficult at first. In Romania, most teachers are used to classic education models that have been used in Romania for over 30 years. Therefore, we are usually facing skepticism from professionals. However, our teachers and educators at CONIL understand the need for change, especially in such a dynamic world like ours. In the field of special education, adapting to the children's needs and alternative education methods are essential. So for

us skepticism was only met when approaching professionals that usually teach typical children. For them, changing the teaching method does not seem so crucial, and they usually prefer sticking to their known materials (of course because of their experience and efficiency).

Another difficulty we have encountered was that we could only involve private education organizations, as the public sector in Romania has to religiously follow the advice of the government. In order to implement this idea at a public school it would require a lot of paperwork for us, so we tried to limit our partnerships within the private education sector.

3. Impact on stakeholders

At our centers we have added some elements in our lessons involving magic and illusions. In the meantime, we have also focused on taking trips with the children to different places, where they would interact and develop different senses such as smell, taste, etc. (you can find the links to the videos at the end of this document). So far children and teachers have been very happy with the introduction of these new methods, because they stimulate the children. Especially with atypical children we see that they respond better to education tools and methods that allow them to interact with their environment, so introducing magic in their routine has been effective.

4. TA

We are focusing currently on the children at CONIL centers. Out of the 300 children, 140 have disabilities such as autism (the highest percentage, 85%), ADHD, down syndrome, epilepsy, etc. These children are between 6-16 years old and they are ethnic Romanians, Romani, Arabs, Turkish and Ukrainian.

Workshops

In this part of the research, we focused on how magic and illusions can help us to teach children through stories. We decided to organize magic puppet shows, as well as an open-air shadow theatre day to observe the children and their reaction to this type of teaching.

Puppet shows

After discussing with professionals, our team decided to implement workshops which will use emotions such as surprise to generate curiosity in the children. We decided to integrate acts of illusionism and magic in our regular puppet shows and theatre workshops with the kids, to check if retention will be higher.

Every 2 weeks, children at CONIL had to participate in these workshops where they were told a story through theatre, using illusions. At these lessons, children also had the chance to interact with the puppets and ask questions, making it even more interesting for them. The following video presents how magic and puppet shows can be combined.

The idea is that the children see the puppets and relate to them. This also gives them an opportunity to do improv, which has been knowing to help children tap into their creativity and learn how to master it from a young age. Furthermore, the puppet show gave the children an opportunity to converse with the puppets, and we saw a high increase in their desire to understand the story and focus on exploring the topics discussed in each of the plays.

We discovered that magic puppet shows could be a great way of teaching basic nature principles such as the water circuit in nature (by using illusions to evaporate water, freeze it, etc). This was proved to be a better way of teaching the children because of how they related to the characters in the story and because the mystery of the illusion sparked their interest.

Shadow theatre

Shadow theatre is an act meant to help the storyteller emphasize their story using shadows. It is an ancient form of storytelling which has recently reemerged as a modern teaching method. At CONIL, we have done shadow plays in the past, but never with the purpose of analyzing children's behavior. Our inspiration has been our long-time collaborator – Leon Magdan – famous in Romania for his shadow plays.

Not surprisingly, shadow theatre has helped improve focus in children and has helped us understand how much more emotional impact this type of interactive teaching can have. With shadow play, the stories usually need some sort of accompanying text to support the storyline, which also made the message stronger.

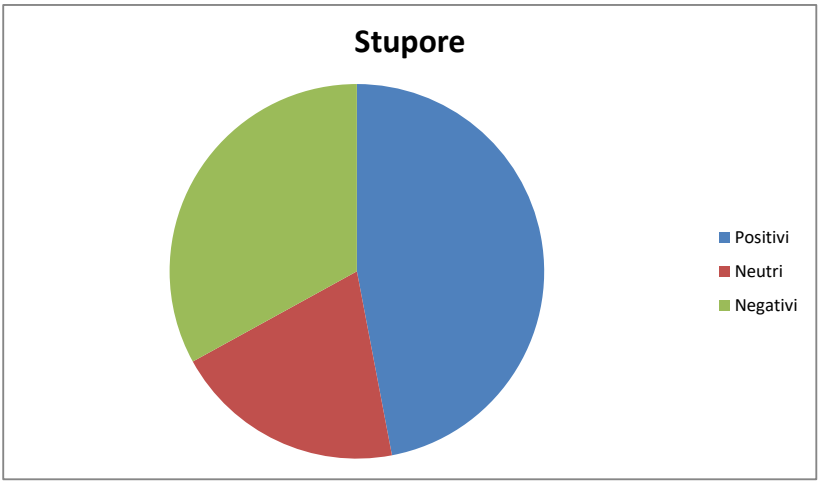
Observations

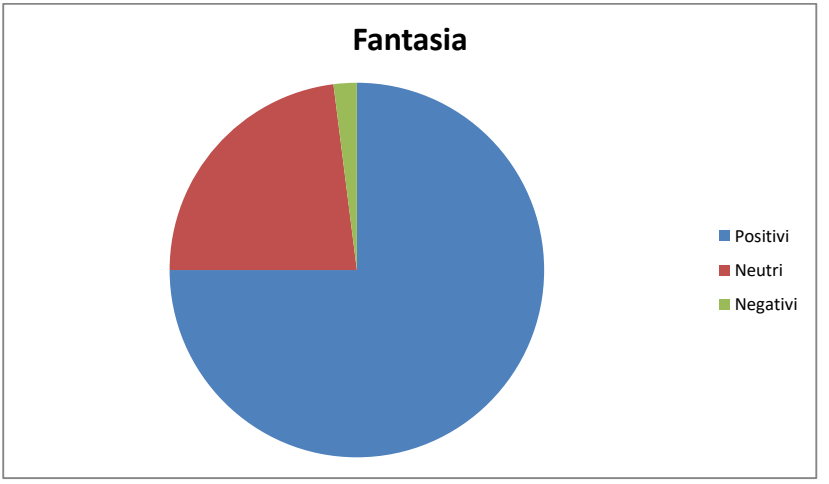
Our conclusions are as follow

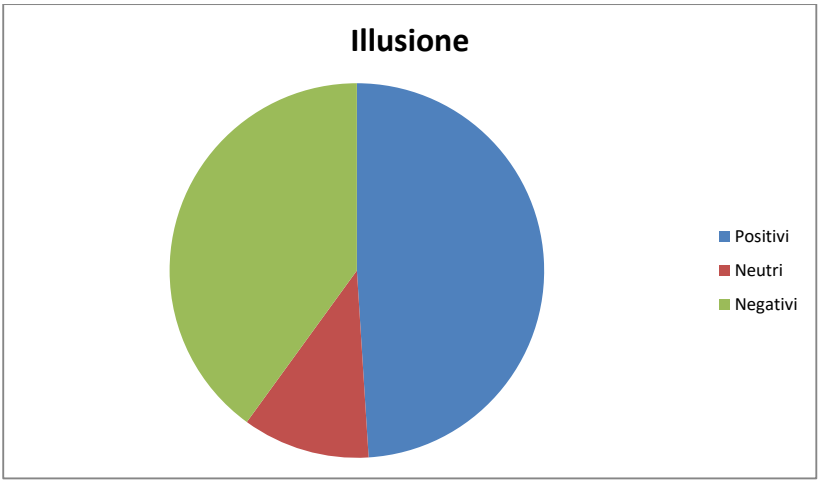
1. Children are more easily impressed by illusions.
2. Children are more likely to retain information sent during lessons if it is presented in a way they can relate to.
3. Mystery will spark the interest of children and will make them want to learn more.

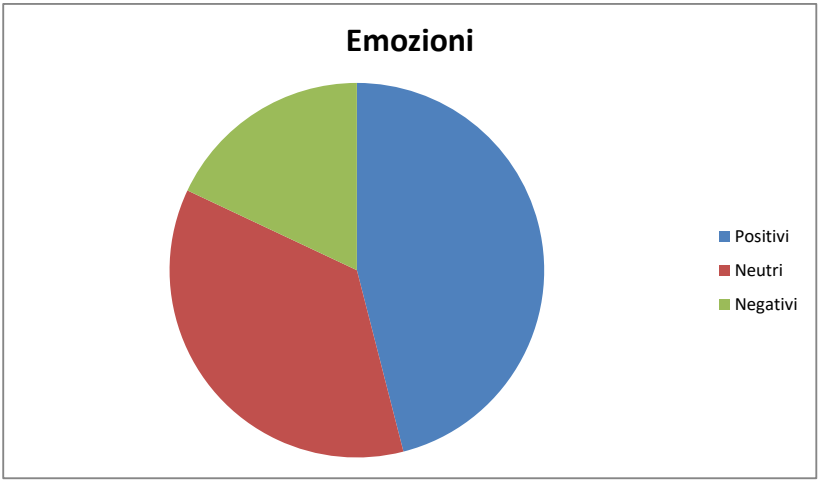
Aware of the importance of words and in order to use the right terminology to communicate with the participants in the activities related to the project, we started by formulating a questionnaire that uses the technique of verbal association.
We have asked to respond, without too much reasoning, with a single word to a word proposed by the examiner.
We have divided the results with three levels so conceived
Positive: when the answer gave a positive meaning and substantially corresponding to the end proposed.
Neutral: when the answer word basically did not make judgment.
Negative: when the answer reversed the meaning of the proposed word, it welcomed and signalled a feeling of concern.
The study sample was absolutely heterogeneous; from 6 to 75 years with varied and differentiated social background. These results (which have not been significantly affected by social and personal differences)

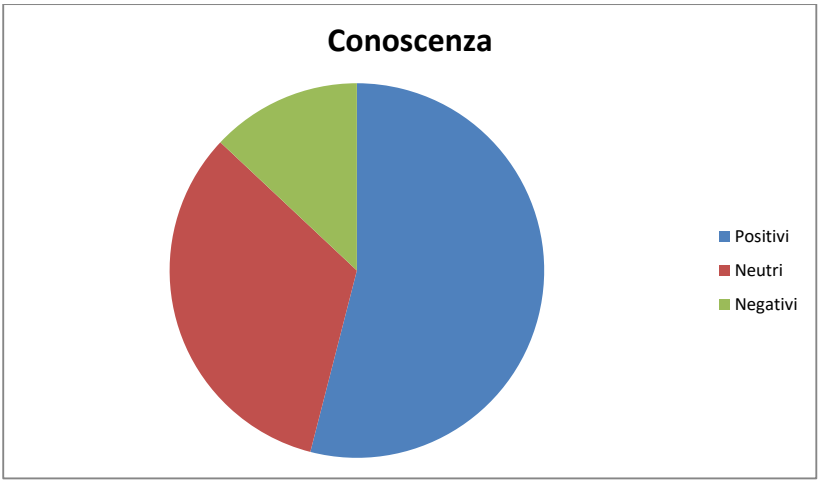
STUPORE	AMAZEMENT	Positive 47% Neutral 20% Negative 33%
FANTASIA	FANTASY	Positive 75% Neutral 23% Negative 2%
ILLUSIONE	ILLUSION	Positive 49% Neutral 11% Negative 40%
EMOZIONI	EMOTIONS	Positive 46% Neutral 36% Negative 18%
CONOSCENZA	KNOWLEDGE	Positive 54% Neutral 33% Negative 13%
SORPRESA	SURPRISE	Positive 51% Neutral 44% Negative 5%
MAGO	MAGICIAN	Positive 21% Neutral 43% Negative 36%
CULTURA	CULTURE	Positive 45% Neutral 47% Negative 8%
MERAVIGLIA	WONDER	Positive 61% Neutral 27% Negative 12%
SENTIMENTI	FEELINGS	Positive 45% Neutral 35% Negative 20%
SUGGESTIONE	SUGGESTION	Positive 49% Neutral 25% Negative 26%

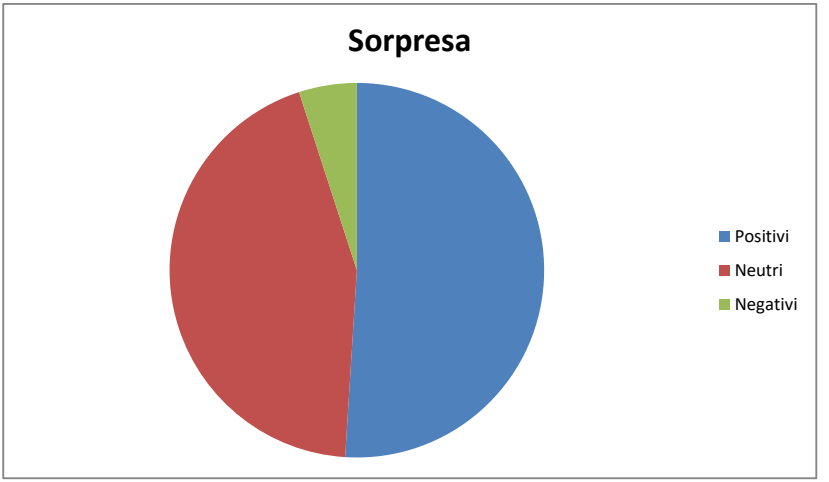

Stupore
Positivi
Neutri
Negativi

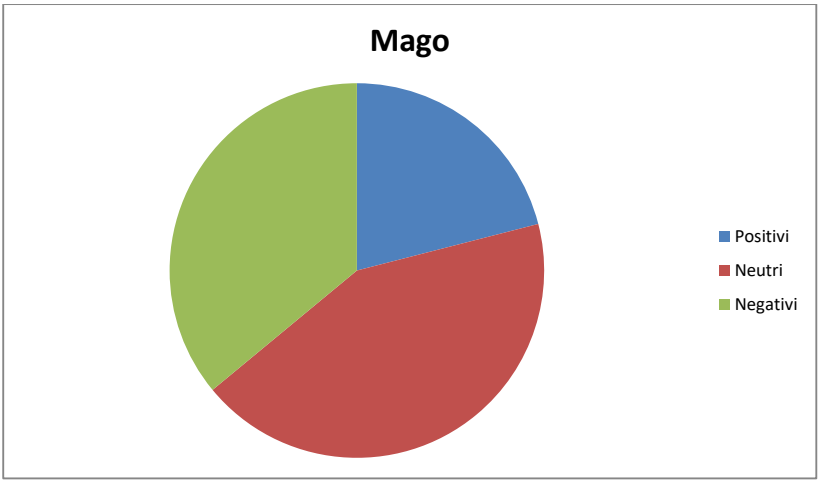

Fantasia
Positivi
Neutri
Negativi

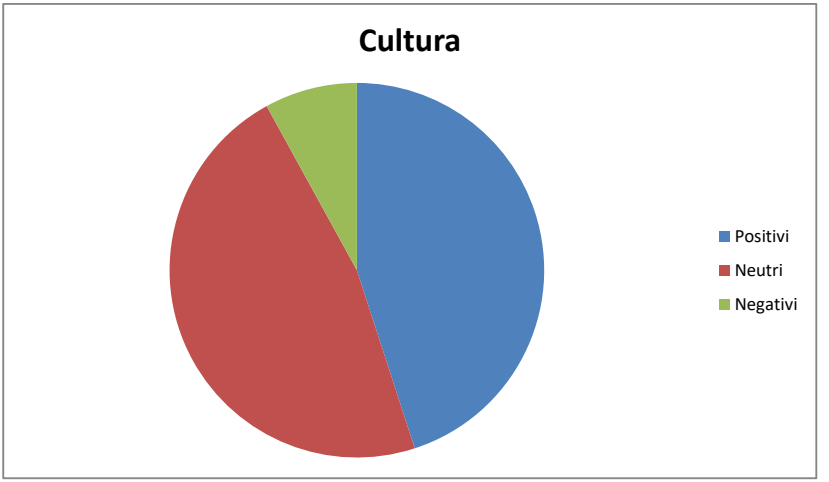

Illusione
Positivi
Neutri
Negativi

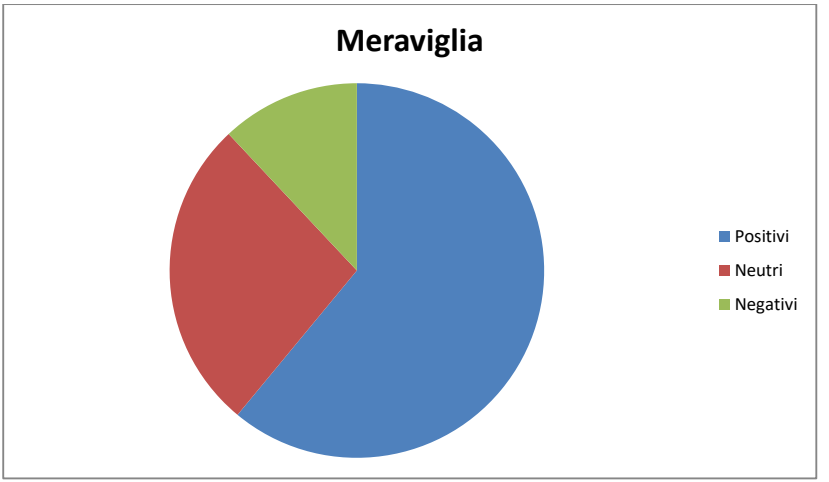

Emozioni
Positivi
Neutri
Negativi

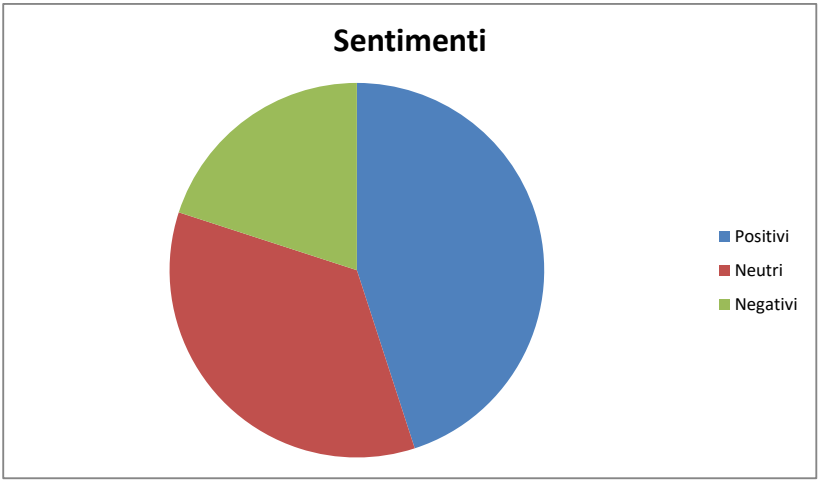

Conoscenza
Positivi
Neutri
Negativi

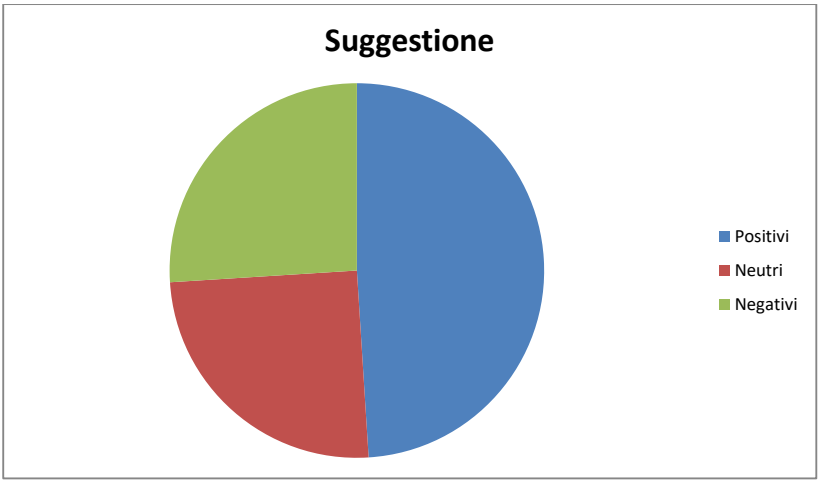

Sorpresa
Positivi
Neutri
Negativi


Mago
Positivi
Neutri
Negativi


Cultura
Positivi
Neutri
Negativi


Meraviglia
Positivi
Neutri
Negativi


Sentimenti
Positivi
Neutri
Negativi


Suggestione
Positivi
Neutri
Negativi

Magic Show

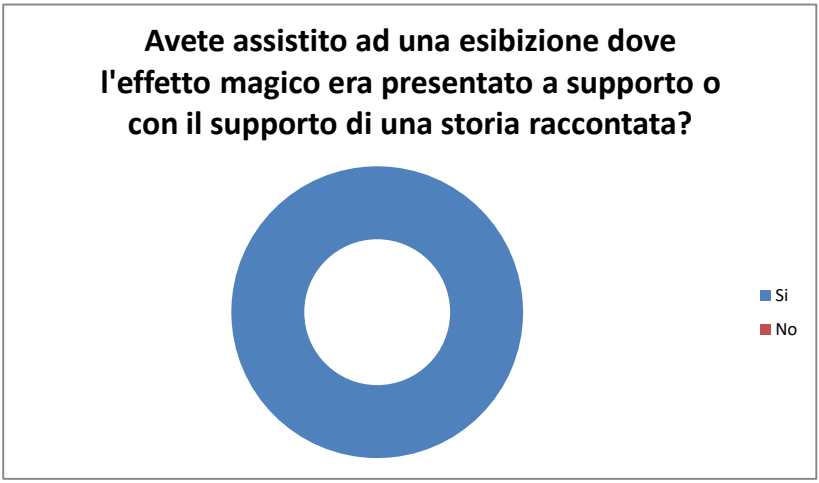
In order to get an idea of how much the magic games that have a narrative component had a hold on memory but above all how, we presented a show where the two components (narration and prestige) had more or less 50% of value.

The audience who attended these performances then asked, after a few days, to fill out a form on the internet and answer some questions.

These are the questions and the results:

Did you attend an exhibition where the magic effect was presented in support or with the support of a story told?

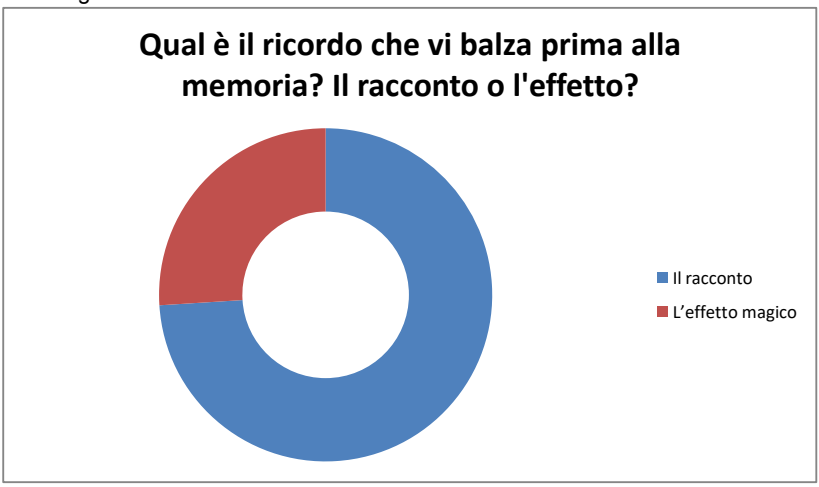
Yes 100%



What is the memory that springs to mind FIRST? The story or the effect?

The story 74%

The magic effect 26%



What's left in your memories?
(some meaningful replies)

The relationship between narrator and spectator

The images you create of the characters

The way to tell the story

The story, which, by the way, I did not know

The story

The public's interest in following the story

The emotion aroused by the story combined with the effect. The effect, however, remains supportive and, if done well, completes the story.

The tale

The results of this test, even if they refer to a single event, encourage the thesis that the presentation of a concept through the association with a magic prestige, strengthening the attention, strengthens its memorization.

In the context of the research concerning the loss of the ability to marvel, the impossibility of being surprised at a sunset or a starry sky and therefore, for more reason, in front of an extraordinary event, we started to ask the young people who participate in the activities related to the project, what was for them a "special", surprising thing; that is, that it stood in their daily life as a beautiful but not usual event. That it happened sporadically and therefore created strong positive emotions in them.
The results of our research were disappointing.
A large number of respondents were unable to answer!
(Most of them aged 15/18)
They responded insistently, almost entirely, citing a positive but usual event. Something they love to do or that, while not special, makes them happy.
The younger boys (3/10) were the ones who mentioned, in greater numbers, extraordinary and occasional things (going to see a friend after a long time - Going on the Snow - Going by Plane, Theater, in Escaperoom) but many of them also got stuck on things that simply satisfy them. (The Dance - Playing in the Latvian - Listening to a fairy tale before sleeping)

To evaluate the results of the research we have divided the results into categories.
Extraordinary and occasional things.
Usual but beautiful things.
Normal things.

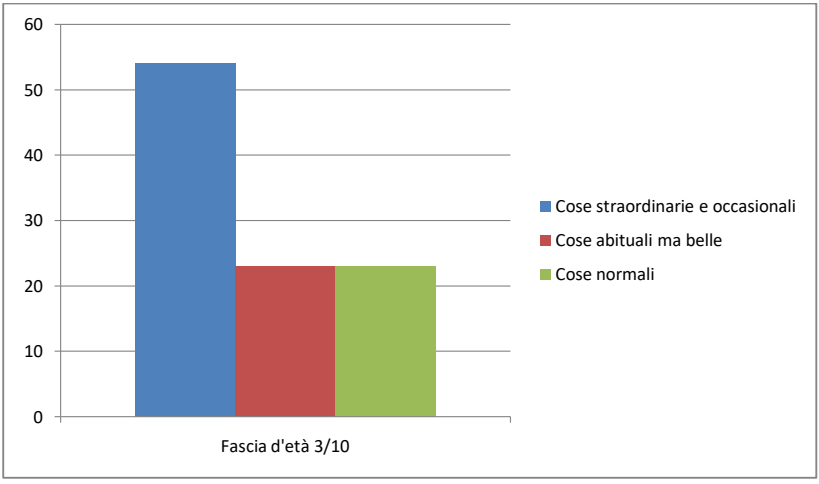
and we divided them into age groups: 3/10 - 10/15 - 16/18

First band 3/10

Extraordinary and occasional things. 54%

Usual but beautiful things. 23%

Normal things 23%

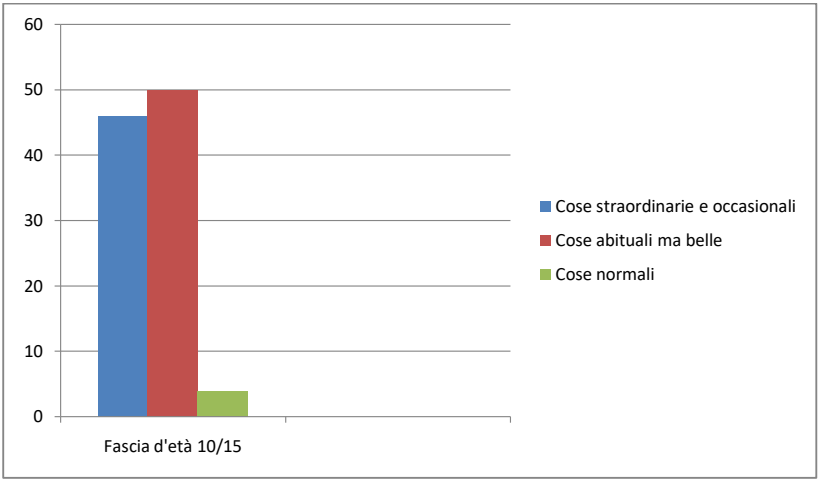


Second band 10/15

Extraordinary and occasional things. 46%

Usual but beautiful things. 50%

Normal things 4%



In this third band we have added a category that we called Help in which we have reported some answers (formulated in a serious way)

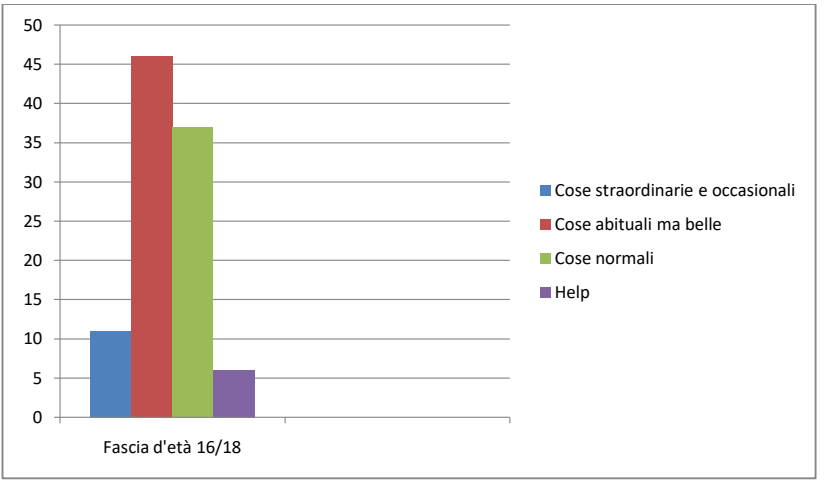
Third band 16/18

Extraordinary and occasional things. 11%

Usual but beautiful things. 46%

Normal things 37%

Help 6% (Exist on TIK TOK - Drinking Alcohol for 4 days in a row



)

The widening of the individual's cognitive abilities go hand in hand with cultivating the transport for emotions.

The attitude of accepting them and letting them flow, settling and evolving in thought, is a habit that should be taught how to brush your teeth properly. We should not ignore, in education programs, learning and acquisition of skills, to understand the development, expansion and custody of emotions.

Many, for a long time, have argued that the ability to understand and welcome art was the prerogative of higher cultural levels; that is, that the higher the rank, the education and, therefore, the social status, the more people belonging to these categories had tools to understand art.

I maintain the opposite: the more a person is accustomed to letting emotions flow, spurred to be surprised by the stars, the sunset, the miracle of life, all that seems obvious, hides impenetrable mysteries, the more critical abilities develop, creative or/and even banally mnemonic.

The advent of conceptual art in the 1920s of the previous century opened doors and created indispensable paradigms. But where do the intuitions of the mainly plastic and figurative artists come from who developed these then "unknown" intellectual models?

Nothing new under the sun. Modern cultural anthropology gives very clear indications of how important they were for the conservation of the species, the ability to get excited and to be surprised at unexplained phenomena.

Reflection A brief historical analysis and some considerations regarding the current political/social/educational situation are necessary to begin.

It is necessary to order the confusion and the current overlap between the various plans, to make some reflections on democracy and what can be the function of a new path of the current method of formation for the new generations.

The question to modernism is: what are we willing to lose compared to what we might acquire? But I think the research has to go into the future, but somehow being devoted to the past.

It is undeniable that the experience of the 900 century in which the major pedagogical paths were developed, was never really questioned.

But let's start with the concept of Democracy.

This form of social structure is fundamentally based on a worldview where the great concepts (Economy, Culture, Politics, Religion, Justice) are based on a right/wrong dichotomy. This has led the collective vision of those who live precisely in a democracy, to become unique.

It is believed (rightly or wrongly, it does not matter) that this form of government is the best possible. That involves the development and survival of mankind in a high social form.

But democracy is precisely the social structure that has allowed the uncontrolled development of economic capitalism. That granted freedom of unconditional exploitation of natural resources. Which supported man's prevarication over animals and nature in general. Which created the ethnocentrism of the human species.

Democracy has destroyed air, sea and land indiscriminately in favour of consumption, profit and profit.

If it had been a question of democracy there would be no social inequalities as marked as those of the Western world and the advantage, as well as the ease, would be the prerogative of all or almost all.

Instead, the social structure that is becoming more and more accentuated, is formed by increasingly distant classes, increasingly defined, increasingly separated, mainly in the access to the future.

But in a democracy how much weigh the individual founding concepts (Culture, Economy etc.) but above all what role does CULTURE have?

It is undeniable that for the formation of the collective consciousness that in the last century led to Nazism, philosophical and cultural tendencies had a fundamental role. The advent of Turm und Drang (Storm and impetus) the neoclassicism and Titanism that led to German Romanticism, created the indispensable foundations on which to grow the values that will determine the apocalyptic phenomenon that was Nazi-Fascism.

I believe that likewise, at the basis of this human drift towards which the bow of this senseless century has turned, there is the current educational apparatus.

The form Explanation/Individual study/Verification through the right-wrong dichotomy is, in my view, the main culprit in this undeniable cultural disaster of the 3rd millennium.

So we went into the dark world of invention, of the curiosity that leads the imagination to elaborate new paths and solutions, to solve problems, and we did so, through illusionism, rediscovering and amplifying the most positive human emotions: the surprise and the wonder.

We believe that ecstasy brings extreme well-being.
From statistical studies it emerges that the ability to marvel and enjoy natural phenomena such as sunset or the starry sky, a bloom or the sight and noise of the sea, in the last half century, have decreased drastically and have done so in a directly proportional manner as they age.

This phenomenon is blamed on the need to pursue economic stability, to obtain a valued social role. They indicate as deterrent of the astonishment the stress and the pseudo availability of information and the speed with which they are reachable.

I think there's more. I believe that the access and availability of information that the historical moment offers are withering away some human components, indispensable components for survival.

For some years now we have been studying and talking about emotional intelligence.

The current state of research in this field, however, propose models not only interesting, but aimed at achieving goals such as leadership, rational control of emotions, even the management and exploitation of the emotions of others through their recognition and manipulation. In my opinion at least useful to our research that instead proceeds in the direction of liberation from the constraints of "needs" but gives emotions a trigger value intelligence, often irrational and suitable to make use of free imagination rather than pre-established structures.

Illusionism is, by definition, the world of "all possible" par excellence.

Well before the cinema and inspiring of the same, it was the art where anything you could imagine, could also happen.

At the moment of its maximum development, in the 19th century, it gave reality to the dreams of flight, of the transposition of apparition and disappearance.

But let's make a small list of what are the absurdities that white magic has embodied:
Levitazioni
Transformations
Premonitions
Apparitions and Disappearances
Transpositions

Foresight
Transmission of thought
Control of matter
Escapology
Suspension
Multiplication
Penetration of solid bodies

These are (but not only) the tools at our disposal to invent fascinations and structure the foundations of an emotional learning that triggers doubts, search for solutions, thought, analysis and, above all, INVENTION!

From my point of view we live in dark times. A sort of pre/new/medieval.

A historical period in which sub-human values such as racism, prevarication, love for the ephemeral, hedonism, materialism are emerging again, ultimately a kind of technological Epicureanism, where problems have predefined solutions, and very often, questionable but not questionable. Unambiguous, almost dictatorial. Just look at the "philosophy" that moves the new media and the technological trend that increasingly prevents the free use of devices imposing a unique use.

By definition, a pc, a telephone, a television, a car, are "MEANS" and such should remain; tools, but the perspective is not rosy. The producers of "objects" sold at high prices, demand that the use they make is predetermined and controllable.

Not only economic capitalism but even behavioural capitalism.
Then we ask again (it has already happened in many moments of human history) help to the arts, and especially to what is called the queen of the arts: magic

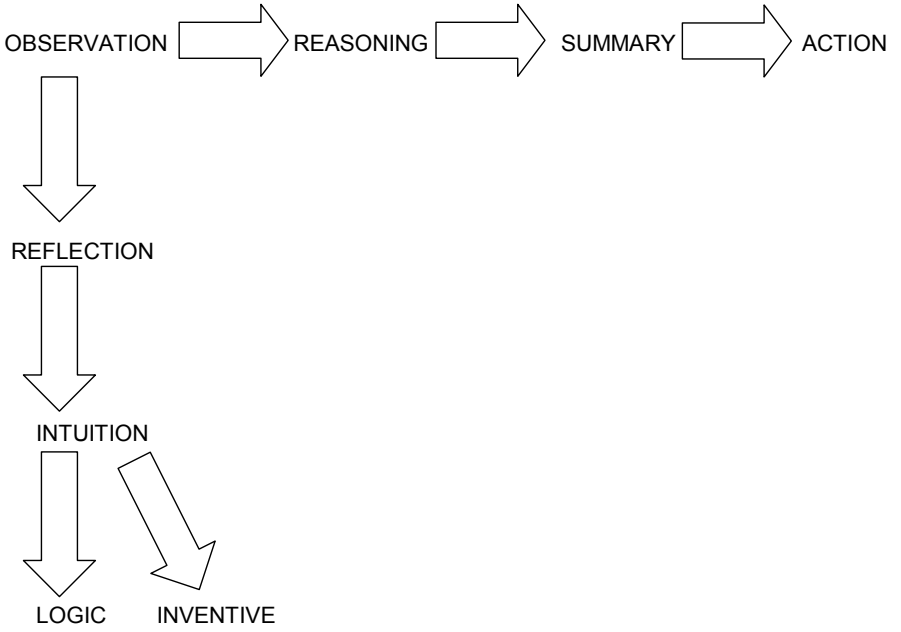
We will also meet some colleagues who have used art to integrate training courses for disadvantaged or disabled people and we will use their experiences to enrich our research and our path in order to develop a model functional operational to our purpose. Return to man abilities that are extinguishing in favor of homologation and, let’s say, cultural unevenness.

SECOND STEP

For the second Step of the project, the Workshops, the shows and the filming necessary to complete the planned activities were carried out.
The organizational phase of the seminars took place on different work plans. Some were based on the preparation of operators who had no previous specific skills, that is, magic effects were taught and perfected to people (especially neet) who could have acquired skills useful to our research, others have been structured on the promise/turn/prestige scheme which, after all, is the classic scheme of the development of illusion.
PROMISE (which can be true or deceptive) At this stage we communicate to the user what will happen or "should" happen .
This in order to focus attention on the event or, in the case of double deception, to create the expectation of something that will turn out to be different and, therefore, likely to create a greater surprise.
This is the case of effects that seem to fail and instead have a prestigious solution.
THE BREAKTHROUGH is the moment when something changes in normal perception but still does not resolve in the final effect. These are the moments of preparation for the realization of the illusion necessary for the realization of prestige.
Magic (or PRESTIGE) is the moment of the realization of something inexplicable, something that contradicts knowledge, something impossible to understand with the tools and skills that everyone possesses.
The WS were held with individuals, couples and small groups in order to diversify the use and have a case study as diverse as possible.
Based on input dictated by theoretical research, we explored the reactions of various categories of people (from children to adults, able-bodied and/or with various types of skills) to probe what kind of emotion they derived from attending a magical event.
Surprise, curiosity, how much it influenced their attention, what memories it provoked, if it evoked things already known.
We also went to meet and interview people who in their life have had important experiences in the field of the use of art (Theater, Music and dance, sculpture, Illusionism) as an act of care/ social integration of various types of people: disabled people, n.e.t, individuals uprooted from their ordinary life, down, autistic, unemployed, this in order to have as much information as possible about the actual results given by the use of positive emotions in the "cure" of social or personal disorders.
All the material shot is now to the selection of researchers in order to contribute, with these experiences, to the formulation of a model of using illusionism as a means of teaching and cultural deepening.

Introduction to the reasoning room

The reasoning room is a summary of the work done during the WNIMTR research.
In this experience, evidence is collected to understand the level of "elasticity" the way of reasoning of students and people in general and possibly transmit them techniques to start using some rarely used thought strategies.
This diagram summarizes the logic needed to be able to face the tests proposed in the room.



«Project Reference : 2020-1-IT02-KA227-SCH-094850»
Programme Erasmus+ key action 2 "Strategic Partnership"

Funded by the Erasmus+ Programme of the European Union

CONIL
FIECARE COPIL ESTE O LUME

„ILLUSION ROOM" REPORT
WE NEED ILLUSIONS MORE THAN REALITY

WNIMR
WE NEED ILLUSIONS MORE THAN REALITY

Material developed by CONIL Association - Asociația Centrul de Performanță Before&After School CONIL (Bucharest, Romania), within the Erasmus+ project „WE NEED ILLUSIONS MORE THAN REALITY

INTRODUCTION

The CONIL Association continued the research developed within the „We need illusions more than reality" project by creating a room of reasonings, of illusions.

This experience was aimed at obtaining and studying the reactions of children confronted with illusion tricks and fascinating games.

The study aims to understand how children react, how they try to find answers, solutions.

WHAT? HOW? WHY?

What are we trying to discover? Throughout the „We need illusions more than reality" project we followed a research of the benefits that magic, illusions and fascination can bring to a child's life, development and education. The moment you introduce into a child's life such tricks designed to develop his attention, thinking, logic and reason, he is reflexively stimulated to think.

How do we try to do this? Through this project, we have taken the responsibility to go through each of its requirements. That's why we managed to create, within the CONIL Secondary School, the "reasoning room". This includes a thinking space, where children sit and receive all kinds of challenges and thinking games.

Why are we doing this? Because, in our opinion, the educational system should be improved, modernized, much more focused on the rational, creative and personalized side. Education should not only include questions whose the answer is either right or wrong, but should engage the mind sufficiently that any answer is beneficial.

The course of the research

The research carried out in the "Reasoning Room" included 5 games/challenges, addressed to a number of 20 children (10 girls and 10 boys), aged between 7 and 11 years, with different disabilities, 14 children with autism and 6 with Down Syndrome.

They were left to choose their own seats in the room. They showed up very excited, happy and curious. We gave them some light instructions, talking about what we were going to do, so that they would understand why they are here.

After each task, the children created a lot of noise, with excitement and impatience to give the first answer they thought of. But most of them did not understand the requirements very well, the games being a bit difficult for their level. We accompanied them with additional explanations and provided them with many additional details to keep them interested and engaged in the activity.

We would like to mention that although it has been a few days since this activity ended, the children who participated in this activity ask daily when we will repeat the experience.

- In addition to this activity, we organized a magic show at the CONIL School, in which 100 typical and atypical students participated. On the occasion of this show, we managed to record a very dynamic video material in which numerous unexpected reactions from the children, enthusiasm, amusement, suspense, surprise, curiosity are noted.

How did the activity go?

We divided the 20 children into two groups of 10. All children had to perform the same tasks, and the instruction was the same for both groups.

TASK 1. OBSERVATION/REASONING/ACTION

The task was: „Our friend will come into the room and he will fell. Can we do something? What? If we do not do this we are jointly responsible for this eventual event." As props, we used sheets of paper lying on the floor, right at the entrance.

This exercise was the fastest understood by all the children. They did not have the patience to write the answer on paper, so they started to answer orally, with great enthusiasm. They debated this topic together, approved each other when they said answers, got excited when hearing new answers. Their responses were: "We quickly pick up the paper from the floor", "We warn him", "We quickly pull him aside", "We close the door so he cannot enter".

However, a number of 6 children did not understand that the paper caused the person to fall. They did not associate the paper as the cause of why the person coming through the door would fall.

This task aroused feelings of empathy and collegiality in the students, being very involved in finding solutions so that their colleague does not fall after entering the room.

TASK 2. INTUITION

This trick works like this: a small piece of plastic is attached to one of the playing cards, then placed in the palm. Push the plastic piece up with the palm of your hand to make the playing card appear to be levitating.

Students observed the trick with great attention and interest, then analyzed the four possible answers to this trick.

- 9 children chose the "thread" option
- 4 children chose the "piece of plastic" option
- 3 children chose the "magnet" option
- the last two, the youngest, could not explain the trick, relying on it's real magic.
- No children chose the air flow as the answer, saying that they did not feel the wind blowing in the room at all.

When asked to justify their answers, those who chose the thread said that they had seen such tricks on the Internet before and that this was the solution, those who chose the magnet said that it was the only way to pull the card up. Those who chose the option with the piece of plastic said that they opted for this option because the host did not move his hands to the side, which means that he was hiding something there.

Task 3. OBSERVATION

The third task consisted of a cup-turning trick, which required a lot of attention. Three cups are taken, only the middle one is placed face up, and in three movements all the cups must be in the opposite position. Cups can only be moved two at a time. The children had to pay close attention to the explanation provided by the host, because he placed the cups differently when he showed them the instructions, in a way he was "cheating".

Although they were convinced that they were very vigilant to the trick, the children did not understand how it was done and could not reproduce it. Neither noticed that the cups were placed in a different position than when the host performed the trick. The kids were shocked how this trick was possible and that they couldn't recreate it and continued to look for a solution to be able to do the trick.

Each of the 20 children who participated in the activity tried countless times, trying not to give up. However, all their attempts failed because they did not realize that their cups were positioned differently from the host's.

After the first failed attempts, the children showed agitated behavior, movements of disappointment, despair: putting their hands on their heads, slapping their foreheads, raising their shoulders. Some of them laughed in the face of exasperation and helplessness, others grieved that they had not succeeded.

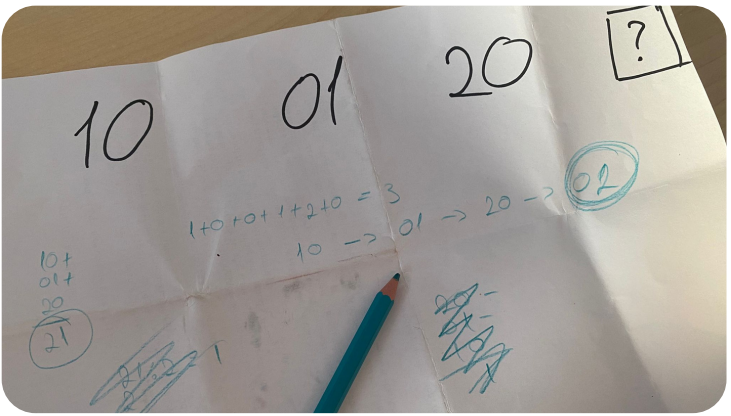
Task 4. BELIEF in mathematical thought

This trick involves the following: a string of numbers, interrupted by an empty box. Children have to find the correct reasoning to find the missing number so that the string makes sense. The string of numbers we chose was the date we wore on.

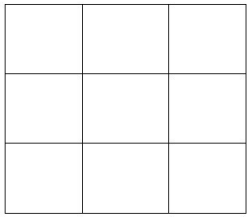
This trick was the kids' biggest challenge. Although the children did not succeed in the trick with the three cups, at least they all tried to find solutions. In this case, the missing number trick was too difficult for the little ones. 6 children did not write anything, did not try any kind of calculation or other method to guess the missing number.

The older ones began to calculate all kinds of additions, subtractions, even multiplications or associations between numbers. Every time I told them that the number they wrote was not the right one, they tried again, but using the same mathematical methods. The older oneswere very involved, but only 3 of them found the right solution, realizing that it was about the date we were on.

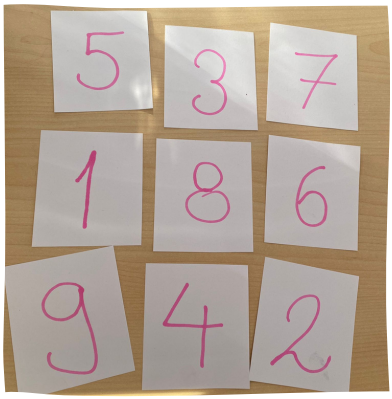
Those who did not find the right solution, when they heard that the string of numbers actually represented the date, were amazed that they did not realize it, but also amused by the fact that they complicated such a simple exercise. The two children who solved the exercise correctly were very proud of the fact that they were the only ones who succeeded.

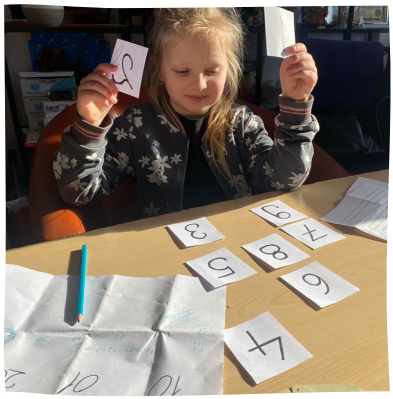


Task 5. MAGIC SQUARE



This is the magic square!In this trick you need 9 pieces of paper on which to write the numbers from 1 to 9. Then, the numbers must be arranged in a square in such a way that each row (horizontally and vertically) must give the same amount.





This trick played out very differently for each individual child. Only one child calculated the sum of all the numbers and then divided it by 3. Thus he found out the sum that all the sides must have separately. He quickly solved the math calculations, then placed the numbers correctly in the square. He was proud of the fact that he finished first and was trying to correct the rest.

He looked curiously at the benches of the others and told them that they were doing it wrong. In his opinion, the exercise was easy. I asked him to come up with a new solution, outside of mathematical calculations, but he couldn't think of another solution. In his opinion, this was the only correct way .

The rest of the children tried to place the numbers randomly until, after many tries, they got the same amount for all sides. They were not disappointed or discouraged that it took longer. They were excited that they were getting close to success, so when they managed to get the order right, they celebrated together.

SUMMARY:

Despite their disabilities and young age, the children were determined to find solutions for each of the 5 tasks!
They had fun trying to work through these exercises and proved to themselves that their minds can create unexpected solutions.

Their reactions of curiosity, interest, attention and involvement were clearly noticeable. It was noted that all these tasks made the children think, puting their creativity and reasoning to the test.

Being part of the WE NEED ILLUSIONS MORE THAN REALITY project, the CONIL Association understood the depth of such classes, in which the child is brought face to face with a different method of education, a method that involves attention and creativity. Instead of practicing the same outdated methods of memorizing some issues, using illusions the child is encouraged to judge for himself, to come up with new ideas, suitable solutions.

WE NEED ILLUSIONS MORE THAN REALITY

CONIL
FIECARE COPIL ESTE O LUME

«Project Reference : 2020-1-IT02-KA227-SCH-094850»
Programme Erasmus+ key action 2 "Strategic Partnership"

Funded by the Erasmus+ Programme of the European Union

«Project Reference : 2020-1-IT02-KA227-SCH-094850»
Programme Erasmus+ key action 2 "Strategic Partnership"

Funded by the Erasmus+ Programme of the European Union

REPORT ON WORK WITH YOUNG PEOPLE IN THE "ILLUSION ROOM"

WNIMR
WE NEED ILLUSIONS MORE THAN REALITY

Material developed by CRAS-Association CRAS - Centrum Rozwoju Aktywności Społecznej (Social Activity Development Center) as part of the project: "We need illusions more than reality"

INTRODUCTION

The report concerns the summary of meetings with young people taking place as part of the "Illusion rooms".

The meetings were conducted by the CRAS Association in accordance with the assumptions of the project "We need illusions more than reality".

The study contains a description of the assumptions of the meetings, materials for work, characteristics of the group of participants.

The document contains a description of the meetings and tasks performed by the young people. It also contains an analysis of the answers given by pupils and conclusions from the observation of their behaviour.

STUDY DESCRIPTION

As part of the project "We need illusions more than reality", an "illusion room" was created. The room was located in one of the secondary schools in Rzeszów, with the consent of the headmaster and in consultation with teachers and parents.

The experiment involved 50 pupils aged 15-18 (30 girls and 20 boys).

Activities carried out as part of the "Illusion room" were carried out in accordance with the assumptions developed as part of an international cooperation.

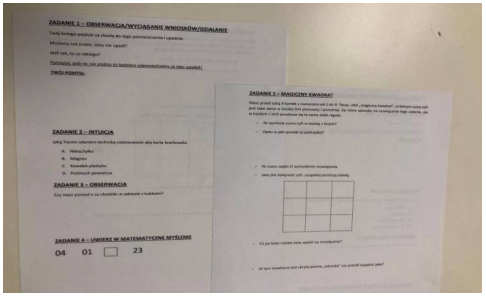
Together, a meeting scenario was prepared, particular tasks were discussed, and attention was paid to the technique of their implementation.

Worksheets were used during the meetings. The task of the young people was to complete the answers. Pupils could take notes, do calculations, etc.

The printed sheet contained 5 tasks, i.e.:

1) Observation/drawing conclusions/action.
2) Intuition.
3) Observation.
4) Believe in mathematical thinking.
5) Magic square.

The sheet template is attached as Appendix 1 to the Report.



After completing each task, the young people had the opportunity to verbally complete their observations. The hosts encouraged the participants to share answers and the way in which they tried to solve particular tasks.

DESCRIPTION OF PARTICIPANTS

The study involved 50 people, including 30 girls and 20 boys.
The breakdown of respondents by gender is presented in **Błąd! Nie można odnaleźć źródła odwołania.**.

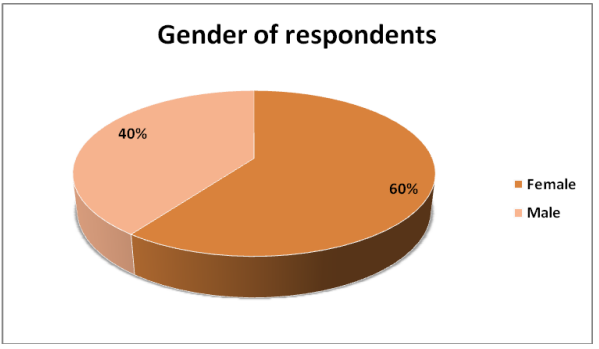


Illustration 1: Breakdown of respondents by gender

Source: Own elaboration

Participants in the study are aged 15 to 18. The most numerous group were young people aged 15 – 66%, and 16 – 14% of the entire group. Seventeen-year-olds constituted 16% of the group. The least numerous in the study were people aged 18 – 4% of the group.

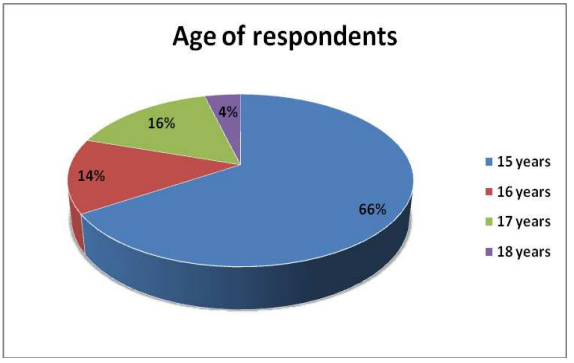


Illustration 2: Breakdown of respondents by age

Source: Own elaboration

COURSE OF MEETINGS

Participants were divided into 10 groups. Each consisted of 5 people. The selection was made in accordance with the age criterion.

Each group was invited to a room where a stand and props necessary to perform "magic tasks" were prepared for them.

Two people worked with the groups. At the beginning, the hosts greeted the pupils and talked about the purpose of the meeting, and then they established relationships with them – they briefly talked, joked. In this way, they built trust, "overcame" shyness, and often also the resistance of the young people. The hosts showed the participants that they were the most important here, and that the meeting can be an interesting adventure for them and a fun time. The participants were informed that the experiment will be filmed and photographed, and the images of the pupils will be used for the purposes of the project.

All groups had the same set of tasks to perform.

During the study, the participants were observed by the hosts. Their behaviour, reactions, degree of involvement and body language were monitored. Particular attention was paid to observing how the young people come to solve the puzzles.
The hosts also wanted to capture the emotions that the young people experienced.

The observation of all groups of pupils showed that entering a new situation related to being in the "Illusion room" was not easy for them. At the beginning of the meeting, the pupils

behaved in the same way as in a standard lesson, i.e. after entering the room, they sat down in the indicated places and awaited further instructions. The young people's faces showed indifference, and boredom in some. The body language of the pupils showed no curiosity or excitement. Some people seemed a little nervous. Lively behaviour was introduced by casual conversations initiated by the hosts. Some people willingly made contact and answered questions, engaged in conversation with the hosts. Some verbalised their nervousness about not knowing what was going to happen. Some of the young people at the beginning of the meeting remained withdrawn and silent.

TASK I - OBSERVATION/DRAWING CONCLUSIONS/ACTION

The first of the tasks was focused on stimulating the young people to observe and draw conclusions.

The task instruction describes a generic scene. A situation was presented which, according to the instructions, was going to occur in a moment. The young people were informed that a colleague entering the illusion room would fall. The pupils' task was to deduce what the cause of the fall would be and how to prevent it from happening.

The props used were sheets of paper lying on the floor next to the entrance door.

The instructions for the task were given orally by the hosts and described in the worksheet. The task was clearly worded, the pupils had no additional questions.

Participants worked independently when solving the task. They did not consult each other, they did not ask additional questions. They answered relatively quickly.

Among the answers provided, solutions focused on helping the given person were in the majority, i.e.: "we can warn him", "shout loudly to be careful", "tell him to stop/look around", "I'll catch him before he falls", "put a mattress under", and even "call an ambulance".

There was advice addressed to the person entering. Their purpose was to protect him from falling, e.g.: "tell him to tie his shoelaces", "he should pay attention/focus".

There was also a reply: "if he's going to fall over, he's going to fall over anyway."

Of all the participants, only 4 people paid attention to the scattered sheets and associated their presence with the possibility of causing a fall. The pupils decided that removing the sheets would prevent the fall.
Some of the pupils looked around the room, not seeing the scattered sheets as a potential cause of a fall. Some noticed the high threshold, which they thought was related to the reason for the event.

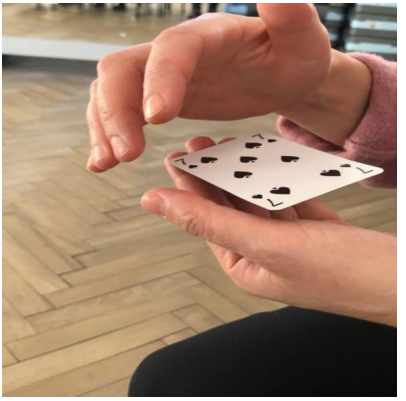
It was noticed that the majority of the young people, when answering this task, relied on their own imagination, creatively solving the puzzle. Some of the answers were related to their own experiences of falling at school. An example of this might be the answers: "I once fell in this room because the floor here is crooked, it needs to be levelled", "a colleague recently fell down because his shoes were untied, maybe he might enter this room".

In most cases, pupils tried to stop the event, i.e. prevent a person from entering the room. It was a common wish to mitigate the effects of a fall, e.g. by providing first aid.

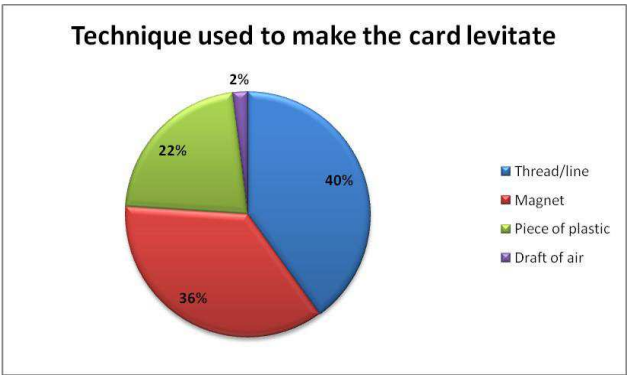
Observation of the reactions, behaviour and body language of the participants showed that this task did not evoke any clear emotions in them. The pupils approached the topic in a task-oriented manner – i.e. they followed the instructions.

TASK II – INTUITION

In the second task, pupils were presented with a card trick called "Levitating Card". The host performed a trick in which a card "floated" in the air above her hand. She asked the participants to mark on their worksheets how they thought the trick was performed, i.e. what technique was used to make the card appear to float in the air.



On the sheet, pupils could choose one of the 4 answers given, i.e.: thread/line; magnet; a piece of plastic; a draft of air. Thread/line was chosen most often – 40% of all answers, followed by a magnet – this technique was indicated by 36% of people. Next, a piece of plastic, a total of 22% of responses. The fewest people, only 2%, chose a draft of air as the technique that made the card levitate.



The collected data show that some people correctly indicated the solution used, which was a piece of plastic. This result is about 1/5 of all answers.

The young people justified their choices on the basis of observations. Several people said they saw black line/thread tied to the performer's fingers. One person noticed shiny plastic.

Some of the pupils admitted that they did not notice anything. They gave their answers based on the analysis of the probability of using particular ways of levitating the card, choosing the most realistic ones in their opinion. The following arguments were used to justify the choice:

- the card was not moving, so it was definitely not air,
- a magnet would pull the card closer to the upper hand,
- a magnet is heavy, it wouldn't hold
- thread, plastic would be visible.

Some were inspired by others' answers.

During the presentation of the trick, the liveliness of the audience was observed. The young people began to pay more attention to what the host was showing. The pupils' attention was focused on the show. Everyone intuitively knew that they were not dealing with real magic, but only with a clever illusion. Therefore, they were focused on discovering what lies behind the magician's skill. This trick roused the young people from their indifference and aroused their curiosity. They attempted to answer the question "how does it work/how is it done?".

TASK III – OBSERVATION

Task number three was to perform a cup trick. The host placed the cups in a specific position, and then, rotating them in three movements, changed their position. The pupils had to repeat the task.

Despite their efforts, none of them were able to complete the task successfully. This was not feasible because the host placed the cups in a different arrangement for the pupils than when he presented the task himself.

Participants were deeply involved in the task. After the trick with the levitating card, the young people looked more interested than at the beginning of the meeting. The liveliness was visible in their faces, in their freer movements, and in their communication.

In contrast to the behaviour during the first task, where the pupils looked bored and mechanically followed the instructions, in the third task they were clearly animated, smiling, and curious.
The moment when they had to arrange the cups themselves turned out to be interesting for each of the groups. The people who were performing an exercise at a given moment were focused. The concentration and effort put into figuring out how to turn the cups around as directed to get the desired effect was clearly visible on their faces. The other members of the group watching the person performing the task, cheered, joked and talked. The atmosphere was relaxed and very positive. In the young people's attitudes, one could sense both the element of support – they cheered on their colleagues, as well as competition – each person wanted to be the one who would manage to solve the puzzle.

The pupils approached the task in a variety of ways. Most of them, in the face of failure, showed a willingness to repeat the activity several times. In the pupils' behaviour, it was

noticeable that the young people focused on recreating the specific movements of the host's hands. The sequence of movements was analysed, trying to recreate what the host was doing. Some people approached the solution of the task in a clever way. They only pretended to rotate the cups without actually changing their arrangement, they only made movements with one cup, they found other ways, for example, covering the cups with a white sheet so that their bottoms could not be seen.

Many people ended the task with the statement "I don't know how it was done", "I'm stupid, it won't work", "Houston we have a problem", "this is bonkers".

Only a few pupils said "it can't be done with this arrangement of cups".

Some tried to work in groups, supporting the pupil who was doing the task. Other members of the group prompted, made movements in the air imitating the person currently working.

Most of the groups showed great tenacity in their efforts to complete the task. Several attempts were made, the host was asked to repeat the exercise. Requests were made for additional time and the opportunity to think.

After everyone in the group had finished trying, the participants had to write down their ideas about what the cup game was about.

Among the answers provided, only a few people indicated the correct reason, i.e. a different original arrangement of the cups. The reverse arrangement of the cups did not allow them to be arranged in accordance with the host's instructions.

Analysing the behaviour of the young people during the task, it can definitely be said that it aroused interest, engaged them in action, group cooperation, and encouraged them to look for solutions despite failures. It kept the young people in a positive mood.

Observing the show, the pupils focused on the person and the activities performed by them, and not on the arrangement of the props. A recurring pattern was that the pupils randomly selected cups and moved them on a trial-and-error basis. They repeated the same movements one after another, without looking for reasons for failure.

TASK IV – BELIEVE IN MATHEMATICAL THINKING

In the instructions for the task, a sequence of numbers was written on a piece of paper with one empty box, which had to be filled in with the missing number.

The sequence of numbers was the date of the meeting (day, month, year).

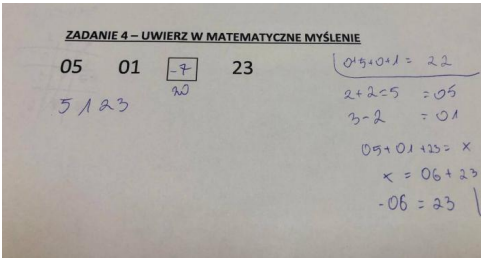
05 01 ☐ 23

The participants worked independently, and after some time, when the host noticed that they had finished the task, he asked them how they came to the result.

The young people focused on carrying out the command, the vast majority of people started looking for answers. Concentration was evident in their postures. Most of the group tried to solve the task on their own. There were also cases of copying results from colleagues.

The young people, seeing a series of numbers, automatically assumed that the task was a mathematical puzzle. There were comments: "oh God, maths", "I'm not good at maths, I won't do it", "we really have to calculate again", "do you know that I'm in danger of failing maths", etc. Faced with such remarks, some people assumed in advance that they would not solve the problem and typed a random number in the empty field.

Some pupils performed mathematical calculations looking for relationships between numbers. Mathematical operations were performed, numbers were added, subtracted, multiplied and divided. Sometimes the calculations were very complicated, references were made to prime numbers, opposite numbers, equations, etc.



A small group of people gave the correct solution. The majority of them indicated the answer after a long moment of reflection. People who entered the correct number had noticed that the given string of numbers is actually the current date, and two figures of the year are missing in the box. Other people either did not enter any number and left the box blank, or entered incorrect numbers on the sheet.

The young people, after receiving information about the missing number, reacted enthusiastically. They were pleasantly surprised.

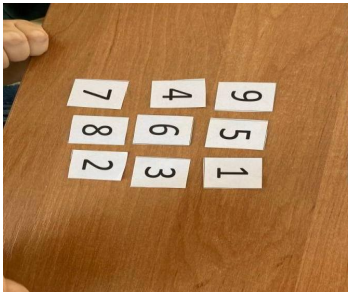
TASK V – MAGIC SQUARE

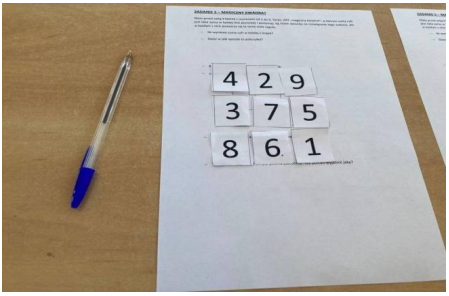
The final task was to complete a so-called "magic square", i.e. a square with 9 fields as in the picture.

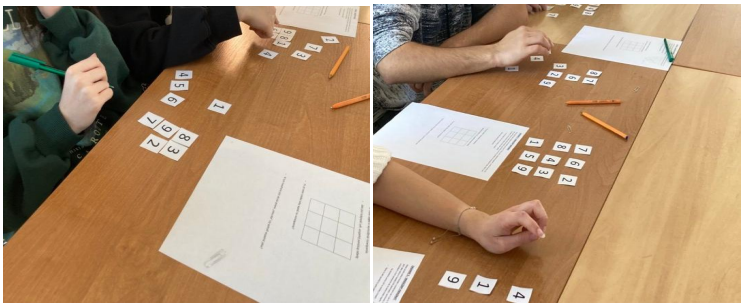
The square had to be completed with digits from 1 to 9 in such a way that the sum of the digits in each vertical and horizontal line was the same. In the first part, the pupils' task was to determine how much the sum of the numbers in each line and column should be. Then the pupils had to complete the square.

This task turned out to be complicated for most of the pupils. Many people had no idea how to approach the solution. Some pupils tried to randomly fill in the fields and add up the sum, they also looked for mathematical rules and relationships. Some of the people consulted with colleagues. The group included pupils who watched the work of others and copied their solutions. A few people managed to get the correct amount. They obtained the result on the basis of calculations, but the calculation method was different.

People who found it difficult to determine the sum often moved on to the next part of the task and tried to randomly match the numbers to particular fields.







The young people described the ways of finding the solution to the puzzle as follows:

- "I added all the numbers and then divided by 3 because there were 3 columns."
- "At first, I tried to choose such numbers that in one line were not too large, of course, some of them matched, but the other part did not, so I used the host's help, which made it easier for me to calculate it."
- "I copied the solution from my colleagues."
- "I guessed randomly what the solution is."
- "I put the largest numbers diagonally."
- "I added all the numbers and then multiplied them."
- "I calculated the smallest and largest possible numbers, found that the largest must be separate to get to the result. Then I arranged it until all the columns and rows came out the same."
- "You have to be make sure that the numbers 7, 8, 9 are diagonal, because then we will get the solution faster."

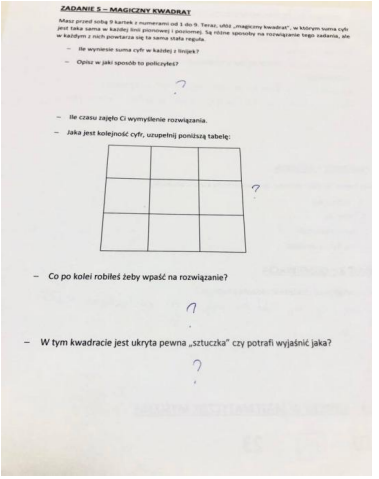
The time working on the task was different in particular groups, but in each of them it lasted more than 10 minutes. The task took the longest of all that the young people solved.

Most of the young people opted to cooperate and consult with each other. Together, they tried to find a regularity that would allow them to arrange the numbers according to the indicated key. Correct solutions (there were several possible solutions to this task) were given by 70% of the participants. More than a dozen people responded to the questions in writing. Not all of them answered all the questions asked.

The most frequently given answer concerning the method of arriving at a solution was that it was "by trial and error". On the other hand, when asked about the amount of time spent on solving the task, the most common answer was "a lot".

Observation of the behaviour of the participants while solving this task showed that they were lively and engaged. Despite the initial discouragement expressed by cries of "calculating again", "oh no maths", the young people "got hooked" into the task. Participants, with more or less success, but with curiosity, began to arrange their squares

with numbers, trying to find a solution. They also began to communicate with each other, to observe the actions of their neighbour, to cooperate.



ZADANIE 5 – MAGICZNY KWADRAT

Masz przed sobą 9 kartek z numerami od 1 do 9. Teraz, ułóż „magiczny kwadrat", w którym suma cyfr jest taka sama w każdej linii pionowej i poziomej. Są różne sposoby na rozwiązanie tego zadania, ale w każdym z nich powtarza się ta sama stała reguła.

– Ile wyniesie suma cyfr w każdej z linijek?

– Opisz w jaki sposób to policzyłeś?

?

– Ile czasu zajęło Ci wymyślenie rozwiązania.

– Jaka jest kolejność cyfr, uzupełnij poniższą tabelę:

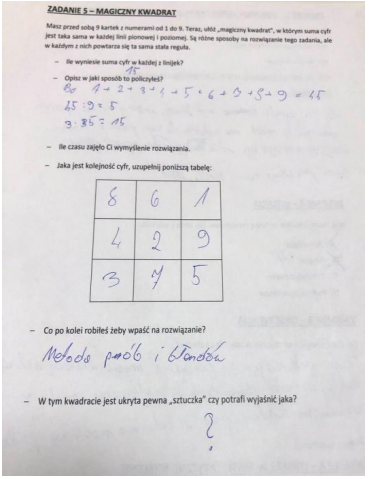
?

– Co po kolei robiłeś żeby wpaść na rozwiązanie?

?

– W tym kwadracie jest ukryta pewna „sztuczka" czy potrafi wyjaśnić jaka?

?



ZADANIE 5 – MAGICZNY KWADRAT

Masz przed sobą 9 kartek z numerami od 1 do 9. Teraz, ułóż „magiczny kwadrat", w którym suma cyfr jest taka sama w każdej linii pionowej i poziomej. Są różne sposoby na rozwiązanie tego zadania, ale w każdym z nich powtarza się ta sama stała reguła.

– Ile wyniesie suma cyfr w każdej z linijek?

– Opisz w jaki sposób to policzyłeś?

Bo 1+2+3+4+5+6+7+8+9 = 45

45 : 9 = 5

3 · 15 = 15

– Ile czasu zajęło Ci wymyślenie rozwiązania.

– Jaka jest kolejność cyfr, uzupełnij poniższą tabelę:

8	6	1
4	2	9
3	7	5

– Co po kolei robiłeś żeby wpaść na rozwiązanie?

Metoda prób i błędów

– W tym kwadracie jest ukryta pewna „sztuczka" czy potrafi wyjaśnić jaka?

?

Working on the task and the presented results showed that the participants own.

SUMMARY

Analysing the behaviour of the young people in the "Illusion room", one could notice a clear interest in the proposed form of work. The pupils were relatively shy at first, and even seemed indifferent and emotionless. In the course of work, their involvement increased, their behaviour became more natural and spontaneous. Joy, excitement, increased involvement in the implementation of tasks were observed.

The young people were eager to find solutions to the riddles/puzzles.

The vast majority of people tried to solve the tasks set in front of them according to specific templates, using calculations, formulas. Creativity and direction of thinking in non-standard channels were behaviours exhibited by a minority. A small group observed the surroundings, drew conclusions and based on them decided on solutions.

Thanks to participation in the "Illusion room" the young people were shown how to come up with solutions in different ways using observation, creativity, and non-standard thinking.

A tool in the form of an "illusion room" can be a good practice to awaken children and youth's curiosity about the world, and at the same time broaden their cognitive horizons while stimulating positive emotions.

Appendix No. 1 to the Report. Worksheet template.

TASK 1 – OBSERVATION/DRAWING CONCLUSIONS/ACTION

Your friend will enter this room in a moment and will fall down.

Can we do something to keep him from falling?

If so, what is it?

Remember, if you do nothing, you will be responsible for his fall!

YOUR IDEA:

TASK 2 – INTUITION

What technique do you think was used to make the card levitate:

A. Thread/line
B. Magnet
C. Piece of plastic
D. Draft of air

TASK 3 – OBSERVATION

Do you have any idea what the cup game was all about?

TASK 4 – BELIEVE IN MATHEMATICAL THINKING

05 01 ☐ 23

QUEST 5 – MAGIC SQUARE

You have 9 cards in front of you with the numbers 1 to 9. Now, make a "magic square" in which the sum of the digits is the same in each vertical and horizontal line. There are various ways to solve this problem, but in each of them the same constant rule repeats itself.

- What is the sum of the digits in each line?
- Describe how you calculated it.
- How long did it take you to come up with a solution?
- What is the order of the numbers? Complete the table below:

- What did you do step by step to come up with a solution?

- There is a "trick" hidden in this square, can you explain what it is?

Comments on the results of the "reasoning room" in Italy

We decided to carry out our research in a "RANDOM" way, that is by involving people who were intrigued by the project and the explanation of what we were working on.
About 40 men and women aged 15-60 were involved in the research.

Some of them with learning deficit syndrome.

We report the work done with our observations and conclusions without analyzing case by case.

We can say that for everyone, indistinctly there was a very strong and recognizable, emotional and attention involvement.
The times of resolution of the tests have been rather long and, for all, the difficulty to go out of the own mental schemes, determined from the way of seeing and to look for the solutions, has been enormous.

Only one person, entering the room said (before starting and knowing what would happen):
These sheets on the ground are dangerous, someone could slip!!
This made me happy, but unfortunately it was a drop in the ocean.

For some, those of whom I knew the phone number, the play of the boxes was done with the OWN number, missing two digits. No one recognized him.

For the game of glasses, although I insisted a lot before I started on the need to observe everything WELL, only one person noticed the different starting position of the glasses.

For the levitation of the card, half answered correctly, but to the question :
How come you said "a piece of plastic"
half said that being the strangest answer could be the solution (so they answered randomly),
only 3 discovered the trick by carefully observing while others reasoned by exclusion (Aria would have moved also other - wire you would have seen, etc. etc.)

The magic square deserves a separate reflection.
Everyone involved had the mathematical tools to solve the game but no one believed it possible that there were different solutions until I proved it.
Some have summed the numbers and divided by three (right),
others thought long and made some tests to get to the result,
Everyone else tried randomly.
Only 5 people understood the "trick" that is the need not to have on the same line the three largest numbers of the series from 1 to 9, but all of them thought they had to stay diagonally.
After the explanation they took a while to understand that a diagonal was not indispensable but it was enough that they were not on the same horizontal and vertical line and only after trying, they understood.
Everyone jumped into the chair when I showed him that the solutions to this game, which took all between 15 and 25 minutes (a third failed) are 36 all DIFFERENT!

They felt stupid, but I heartened them by saying that their way of thinking doesn’t mean that the right solutions are multiple and that it would be a good thing for them to start thinking differently even in front of everyday problems.

Many people asked me where they could find other games to play to test themselves, what to read and how to deepen the topic as you are very passionate about this "new" way of thinking.

It is undeniable that the challenge of the third millennium to human development passes through problem solving.

If we are not ready to overcome, to the point of abandoning, the dichotomy between right and wrong, we risk taking stupid, unsuccessful paths.

If we persist in the search for unambiguous, universal, definitive answers, from a certain liberating point of view, we will not be able to improve and to progress I mean not only progress, but also survival.

The only possibility to divert humanity from the technocratic, totalitarian involution of the power of the luminaries, without realizing that their own domination is leading us towards the abyss, in a society built for the use and consumption of capital, profit and xenophobia, It is starting from the pedagogy and training of young people.

I looked at the 1990s with suspicion when the reform of the university led to mass enrollment, at the expense of entry into the world of work (which creates strong specific skills and therefore the possibility of creation) by proposing increasingly closed study models, less and less interlocutors, absolutely less devoted to research and I believe that the intuition to give way to children to develop the ability to "imagine" the possible answers by leveraging positive emotions such as surprise, wonder and wonder is one of the roads to go absolutely.
The magic created by illusion and prestidigitation is certainly one of the possible picklocks, perhaps the best.

From this synthesis of our work over the last two years comes the need to begin an active experimentation on how much imagination, reflection and deduction are the heritage of the new generations.

The reasoning room could be an easy path.
What is disappearing from pedagogical structures is experience. The maturing of abilities gained in attempt and failure.
It is always and only considered performing what it succeeds and not what fails.
Meanwhile, we can say that failure is the necessary measure of comparison with success.
Today, success seems to correspond more and more to consensus and profit.
The Google generation no longer has the need to synthesize the experience into expertise, remember, tell and this is a nice lose.

What google has created is what will be lost by the next generation.

But do they know? And who MUST make them aware? Alarming them? Forcing them? Creating tools? We're kind of in the third dimension paradox that's becoming more and more invisible. Technology, instead of opening up to the 5th dimension, is tearing one down.

Let's try to synthesize the thought expressed by Pirsing in Lo zen and the Art of motorcycle maintenance.

Your bike stopped, so the trip you were on got stuck.
The restart depends on a simple repair that anyone can do in a few minutes; it is simply to disassemble a latral cover and unlock a mechanism.
You are then disassembling a cart of the bike, following the instructions to the letter of the booklet, but the screw, aimè, spreads. The booklet was written according to the concept of right/ wrong, a scientific dichotomy that seems to foresee nothing but a single problem (disassemble the paper) and a single solution (unscrew the screw)
We overlook the countless possibilities known to solve the problem, which are a consequence of experience, and try to see the problem in an evolutionary perspective.
The history of human evolution is dotted with trial and error, but above all with observation.
No important result can do without creativity, originality, inventiveness, imagination and intuition and all these things need observation and reflection.
But back to the problem. We assume that you can make a phone call to our expert friend or, nowadays, consult google and say that ALL the known solutions (at the moment) are impracticable. We don't have a self-locking clamp, a sluggish liquid, or a percussion screwdriver. Not even a drill or a blowtorch.
What can save us from having to interrupt the journey?
First of all, learn to consider the screw, not only an insignificant piece of metal with a helical shape, as there are billions of billions, but as something that is part of the whole and that is absolutely not negligible, never.
Second not to regret the moments reserved for observation and reflection, all the time dedicated to rediscovering the need to leave the dualistic scheme of right/ wrong.
Intelligence is something that can be developed, not only talent, but also intuition, a set of things that the current way of thinking, dualistic reason, has tried to hide.
We're stuck. What we need to learn again is not to escape the blockade, but to accept it as a necessary moment to develop our experience. To be sure that that vine spread will not be the end of the journey but the starting point of a new journey. That mistakes will not only be experience but picklocks and that the real problem to remove from our lives is the certainty, which comforts us, teaches us to deal with everything except new situations.
As my friend Antonio says, the history of the evolution of man passes through ceramics.
Probably the very first sign of civilization is the invention of the container for food, the bowl.
The man discovered that mud extracted from a puddle could be shaped but he also understood, seeing it shatter, that it could not only be dried in the sun. Then that ERROR suggested to him to dry the fire but, according to mistake, the bowl exploded. So he tried to mix the clay first with dung, then with sand, increased the volume of fire and...
They are observation, error , creativity and intuition and, probably, wonder, the keys on which civilization was built.

When you seek the solution to a problem or the interpretation of a fact, you are not only solving a question, you are growing with it.

Thanks

This project has been approached with extreme conviction, love and dedication by many people who I think should be mentioned here.

Since even small contributions were important if not essential to develop both the theoretical and the practical part, we will insert the names in random order:

From Poland

Ewa Syrylak, - Mikołaja Kopernika w Rzeszowie - Beata Słowiak

Ewa Bar and students from Zespół Szkół Agroprzedsiębiorczości im

Ela Dolecka - Justyna Kołcz - Justyna Wróbel - Mariusz Guzek

Agnieszka Krzemień - Natalia Kolber - Monika Bieniek-Altuccini

Przemysław Wilk - Mikołaja Kopernika w Rzeszowie - Beata Słowiak

From Italy

Stefano Arditi – Marco Agamennone - Marco Russo - Raffaele Filaci

Vittorio Marino - Flavio Iacobini – Eva Arditi – Maria Grazia Santucci

Greta Arditi - Alessandra Morelli – Franco Concilio - Antonio Grieco

From Romania

Irina Ismail - Adela Caragheorghe - Malina Magdan - Mariana Ion

Simona Mocanu - Marius Drăguș - Leon Magdan