Romans Vitkovskis, Uldis Heidingers

How to teach differently?

For many centuries, the way and content of teaching has remained unchanged. For example, algebra taught in the school is many hundred years old but despite the diverse educational methods the benefits of it are quite poor. There were things to be ignored because there was no suitable model for what was happening in the heads of the people; everything was done only based on external observations (psychology, pedagogy, etc.), since nobody ever could enter the head - therefore it is work with a black box.

In the heads of the people is everything that has been inherited at birth + what they learn from the age of an infant with our own participation + other teachings of teachers, professors, etc.

The purpose of this article is to show the path to a fairly close picture of what is happening in the head and what happens if it is ignored.

A very important introduction from the history

In 1977, the Research Manager and the Head of Department sent me to a conference on "a unified language for information search." During the conference, I realized that everything was somehow wrong. Linguists and other professionals had invested great amount of resources but the benefits reduced as the resources increased. Even a simple requirement like an old lady's request to a computerised librarian - please give me something to read about love - could not be fulfilled.

I realized it cannot go on like that because the problem is that we perceive everything approximately and at the same time precisely enough to be able to exist fully.

As at the university's computing centre, in addition to programming, I also worked with the theory of inductive proof, I began with it because it was considered to be the model of cognitive and creative process, as well as it was the method I preferred.

The theory of inductive proof, in short, is like working with a black box. By observing what we put inside it and what we take out of it, we try to guess what is in the black box by writing a hypothesis on each section of a long tape (giving to some kind of a tool (the hypothesis) the same thing as to the black box it must produce the same thing as the black box but in the next step the outcome of the hypothesis may not match with the outcome of the black box; then it is necessary to change the hypothesis in the next section of the tape) about what lives in the black box. Let's assume that the hypothesis is a hypothetical tool/analogue living in the black box, for example, we put meat inside the black box and take an egg out of the box - hypothesis is a crocodile. We put grain inside the box and take out an egg - we change the hypothesis, it is a chicken now, because chicken also is an omnivorous etc. Mathematician Gold argued that, if from a place we did not know before we begin to write the same thing over and over again to infinity then we have guessed what lives in the black box. Seems simple but there is a big drawback - if we knew the world like that, we would need infinite time to distinguish a chair from a cup of coffee.

Does anyone at all need the whole truth sometime, not now? No. Therefore, came the idea of replacing the theoretical truth with a usable candidate of truth. If we set up growing criteria of hypothesis results matching with the number of black box results, then each time the hypothesis will give something even more concurrent with the black box but by working as far as the infinity it will be guessed what lives in the black box.

Of course, when talking about the heads everything shifts around images not tangible things.

This idea itself struck even myself by the fact that we perceive and remember everything around us approximately, over time more precisely but not completely precisely. Finished with the irrelevance of truth I began to think why the question of the old lady could not be answered at all. We can analyse text word by word or by phrases but there is such a thing as concept that can be termed in different words or described in different words without even naming it and still - everyone will understand. Everyone understands what a chair is, if you tell that it is a thing

you can sit on and support your back. Each particular chair is a separate example of the concept of chairs - a definite representative of the concept.

As I walked a little further, I reached the recognition of things, memories, thinking, etc.

Gradually I built the model of head that is not unpretentious to the whole great truth but can be used for some time as everything we have created.

What then may be happening in people's heads?

As I mentioned in the previous chapter, the whole big truth is unnecessary and impossible but we use the approaching candidates - hypotheses. What do we remember and how do we recognize it? We think that we recall certain things but at the same time we know things in general as well as certain things. For example, we recognize a car and we recognize the car of a neighbour. Many things seem to be true but they are not true. In my opinion, many image recognition programs were originally built upon the programmers' ability to describe the recognizable things - four legs, straight or curved, facing down from a flat platform, etc. I do not think that such descriptions live in our heads.

To describe everything in a way that an unexperienced reader understands the subject and intuitively feels that it is natural, we have to explain the nature of the things we are going to handle. Everyone knows what a cookbook with recipes of food is, also many devices come with instructions of use, which basically are the same recipes or descriptions of actions step by step, which will provide the desired result. If we can intuitively imagine how something can be done, then it is also possible to have a written recipe. Recipes for a computer are programs that lately have been called applications. In general, it is an interesting terminology because applications are decorations, which are prepared by gluing colouring paper on a cardboard; such art-pieces were once made in the first grades of elementary school. Here we can already notice the fact that the language is ambiguous - one word corresponds to different terms.

Basic understanding - agreements.

In general, we all live in a world of agreements where the word "word" in the language itself is an agreement made a long time before; we agree on the time and place of a meeting, we negotiate relations, etc. Therefore, also this time we can not continue without an agreement.

Let's make a deal and agree that recipes, instructions, applications, and otherwise called descriptions of activities are called programs - not a good term because it is too associated with computers, but still a program is closer to something doing what the desired outcome can be reached.

The theory of recursive functions, the theory of algorithms and the inductive proof theory are concerned with the possibilities, groupings, duration, length,

properties, and other characteristics of programs. It has been proven that a non-trivial program can be improved so that it can works faster; it has also been proven that there are programs that create other programs, etc. It is important to know that there are programs that can, for example, make an analogue image of any cup, or another program can make an analogue image of any comb. We will take these proven facts with faith because they can be verified by reading the relevant scientific literature.

For the sake of simplicity, we will agree that all the things in the black box mentioned input will be programs – making images and everything else, but hypotheses will be programs making images. To make it simpler, let's agree that programs will create images that include a visual fixed image, motion picture, sound image, tactile image, and other similar images.

Of course, we should mention again that theoretically all the hypotheses/programs are written on a tape, which is divided into equal sections; each section contains a hypothesis/program according to the experiment with the black box observing what was placed in the black box and what was taken out of it.

More advanced readers know that the first computer program prefixes consist of "0" and "1", where this number in the binary counting system can be easily converted into a natural number, as well as feet and yards can be converted in meters and centimetres. We will call this native number the program number.

One of the most important issues is the usability criteria. Let's accept the following: the program/hypothesis compliance with the requirements to write it on a section of the tape is as follows: the program's output must coincide with the production of the black box at least to some extent, for example, in 2/3 of points, but in the next step, already in 3/4 of points, i.e. there should be an ever better match.

The first steps to remembering or the memory

What exactly do we remember and whether there is a model possible for this phenomenon - an analogue valid enough because brain researchers have not yet been able to explain exactly what and how the brain remembers. Remembering everything successive in a row, as photos, is not too good because then there will be problems finding the particular image, as well as with the amount of equipment/brain to record it all. Nature has definitely gone a simpler and more rational way.

So, let's begin again - we have SOMEONE (most likely genetically inspired and inherited at birth) who has something new that he will start to get to know. We can look at the new thing as something in the black box and on the tape. In the first section, SOMEONE writes the program (its number - the natural number, which comprises the program text using 0 or 1 and converting it into a natural number), which claims to display images of all the things represented by the particular thing (they are not only images of tangible things but also feelings,

movements, etc.). In a while, SOMEONE has the same or very similar thing for observation, and SOMEONE operates again the program described in the first section and observes if the thing SOMEONE sees is approximately the same image that was created by the program; if yes, SOMEONE writes the same program in the second section, if no, SOMEONE changes the program to a better version, which is entered in the second section, etc. If the program generates something completely different (the upgrade attempt fails), then SOMEONE starts the same process with a new tape, because it looks like a thing from another set has come in the way.

This SOMEONE can always write a program/number in a section of the tape, because SOMEONE itself is a program that can write programs - a recipe that describes how recipes can be written, for example, for different soups. The set for which the program/SOMEONE writes the series of image creation programs to be written in the sections of the tape the program/SOMEONE choses according to the principles written in the program/SOMEONE itself, which we currently do not know. Of course, the program/SOMEONE does not work in a way as we think of creation of images of cars and other things but only on the basis of his/her own track record.

In general, it is to be understood that this SOMEONE for everyone is individual and it seems that this SOMEONE is repeatedly dubbed and protected in the brain, and it comes with birth as the most important contribution of our genetic code.
This is the most important assumption for the model of head.

SOMEONE also deals with accumulation, searching, and running all of the programs of if its own creations.

All discussed screams for a natural conclusion that the SOMEONE must remember the programs/what SOMEONE wrote in the last section of the tape, which stands for the production of all images from the set (made by image maker). The SOMEONE after receiving the next image, at first searches its programs to find something that might match or is suitable for improvement; if something matches then by the analogy after similarities, the earlier built program is used, so that something new will be built from the ready-made fragments, which will be and are a derivative of the old. That's why cars at the beginning looked like carriages. There are a number of other examples, which show that many times the new has been created by the analogy with the old one.

Further we will discuss how instant recognition and remembering of images works but now according to the agreement our model will remember the program numbers or the program code itself - the recipes. It seems like that SOMEONE is also a full-time administrator and process manager.

In fact, SOMEONE creates programs that can generate images for everything that they have prepared for, which not always matches with the observation.

Another model for the same

Let's imagine that SOMEONE is a drawing teacher who helps his students to learn to draw. When he sees something, he calls his unprepared student and says - now you will learn to draw what you see, and everything that can be seen in the same bag of what you see. The bag you choose yourself, as well as the characteristics of the bag. The student draws something and the next time he is being called, he says that now too much must be redone, therefore SOMEONE will call another student who starts from the beginning. There is another version when the student says that he can not cope and asks for help - then SOMEONE teaches the student/reconstructs the student so that he is better at drawing the old picture + a picture of the new item + everything else that the student considers to be consistent with the drawing will be put in the student's bag. The teacher accepts the student's work only when he has made the image closer to the original object as before, according to criteria determined by that SOMEONE. If a moment comes when the student is no longer taught for a longer time because his drawing is in line with the criteria of the SOMEONE, then SOMEONE gives him a name and declares it a concept that may change over time because sometime that SOMEONE will need to teach the particular student to draw even better.
Let's agree from now on to briefly call the program/SOMEONE - the Head.

It will not be as simple as creating a list of numbers but this is one of the basic assumptions. This step is also driven by our ability to imagine a thing, for example, a painting, meaning when we close our eyes we see some sort of a painting in a frame, with colours, but really undetermined which painting exactly it is - something we recall as a painting may be also more specific image but for each one different and quite uncertain. If we try to remember a particular painting, for example, George Venus, then the shapes are already more specific. It seems to confirm the idea that there might be something that makes up the entire painting and among other also images that do not contain paintings at the same time including the images of the paintings we have seen.

Recognizing things

If we have an image of something in our memory - we can recognize it or re-play it using a pre-built program and compare it. Of course, a question arises - how can I as someone who has never before seen, for example, "Zim" (a car with seven seats produced in the 1950s in the USSR) manage to recognize it as a car because these particular cars are not in my memory. Why are there a whole lot of things that we know almost infallibly and the quality of this recognition is very long lasting or even unchangeable in time. Everything can be modelled as the stabilization of the various hypotheses/programs in the course of examining different things. Now let's take a look at a situation when you look at Toyota, then Ford, then Dusenberg (the car of the beginning of the last century), and other cars; the tape called Head records the program numbers that are capable of generating images of all these cars seen. If the current program - hypothesis badly copes with the task (is unable to produce a good enough image of the particular car), then the Head changes the program to a better one - with a different number. After some time, if the situation arises when the program does not be

changed for a sufficiently long period of time (for example, it keeps at least the number steps as required by the matching programs for the black box manufacturer), then we say that the process has stabilized and we have created a concept - a program capable of, for example, creating images of all cars - the concept of a car. Obviously, creation of each concept requires a lot of things to look at - i.e. observations that take time. If there is a concept, then looking at a thing a program is running that shows the image of this thing, which can be compared to the appearance of the thing in question, thus, as a result of the comparison of the images, the thing is recognized at the level of the concept. We all known cases when we have mistaken and identified something completely different from the thing actually seen. This naturally occurs when the memory and recognition are created as described.

For observations in practice, instead of the model with a black box, one should try to get into the whole of what was seen in his life to reach to the concept of a car. Several wheels, movement, people inside, steering, luggage, cargo, engine, windows, lights, and a number of other things that we think seem to create the concept of a car. The Head definitely uses something else to get to the car but we will not know it in practice. We also have the opportunity to combine several concepts and give our Head an idea to create new things, for example, cups, dishes, cans together can form a new concept of a dinnerware. Consequently, the concepts form not only from the observed but we can also construct them in our consciousness. The model of memory and recognition is the base the model of the Head can be built on because this is just the beginning - it is necessary to answer the questions - how do you remember or recognize certain things, why do you recognize them almost instantly, why can we remember different events, how to direct memory and recognition processes so that we percept things almost the same way, what is thinking, etc.

One of the basic assumptions is that the Head can give itself an idea to perceive a set of objects as one whole object. This assumption also creates the concept of abstract matters.

Individuality of recognition and memory

Each of us has had different meetings with things and their combinations, so each program that has been stabilized and became a concept is different from another person's program. No one can put his eyes in the position of the eyes of another person and experience their life precisely step by step, which shows that each concept has developed individually and by trying to remember a cup of coffee each will have their own original image of the concept.

Everyone has his/her own Head, own order of things to be seen and different time - the number of steps (can be presented like beats or, for example, time portions of 12 seconds, etc.) that are chosen for different viewing stages. We will note that possibly such beats are necessary to be able to remember the image of a particular thing.

Full picture - frame

Previously we discussed how each individual creates certain concepts/programs for a group of things. We are aware that every moment we capture the view of not isolated things but a whole set of things including motion, shape, structure, smell, sound etc. Straight and curved are also concepts that, together with a whole bunch of others, can contribute to the creation of images of things. We see wooden board as a thing but we also notice that it is bent. This is our everyday life.

So, we see all this picture as frames of a movie with sound and feeling always present. I had already reached the thought that it might be necessary to model a frame, the remembering of it and the particular things included in it; the problem was to figure out why we can remember a pre-existing room, people in it, certain personalities, and other things like furniture.

The closest was the idea that every single frame we observe is all about the whole set of concepts involved in the production of images included and observed in this frame - an approximate copying, which is constantly compared to the scene observed. Similarly, how cinema is made - the activity of each actor, the speech and the space are fixed on the film, and at any moment we can compare the film with the position of the respective actor, the speech and the space where they operate. If we go step by step, the result of each beat is verifiable. So once again - image in the frame is built by concepts/programs that repeat what every moment is seen, heard, felt etc. Also, testing is done every moment comparing a special internal image to the observed one. If there is something wrong with the test, either the program/concept is being improved or replaced by another program/concept; how it happens is described before.

For the memory, this is not enough, because it is necessary to remember the sequence of frames and the specific things in it. To solve such a problem, it was necessary to introduce two things - the images of all things and the concept of it and the relationship between the particular things in the image, as well as the sequence, since we remember what followed what.

It was necessary to make a decision here - to assume that it is happening and not research why because it is the way it is and we can accept it as an experimental result that we include in the model; or we try to simulate this situation.

I decided to simulate the situation and came to the conclusion that it is necessary to start a biological clock, which starts to work at least at the birth and counts beats throughout the life. The generated interaction of concepts was not a big deal, since every image created by a concept we can write down all its neighbours in a particular frame - the images produced by other concepts, to say the least, to refer each one to another-one. The introduction of a beat creates a specific number of the beat for the situation/frame that we observe. Programs typically have an input and output or the data that must to be processed at the input and generated at the output. It is the same as in the kitchen - the recipes are names products and we receive what comes out if the recipe is prepared correctly. Following this logic, for example, presenting the program of the concept of a human face a frame beat number should result in the person who participated in the particular frame at the particular beat. The same should happen with all the concepts involved in the frame. So, if we assume that the concept of a particular

beat number issues an image of a particular item that matches this beat number, then remembering the beat number can provide the image of the particular thing that was in the frame at that particular time. Remembering of certain things may be clear but the relationship of things in a single frame still remains a mystery because we remember it all together. Now we will create all the frames so that in the memory will be the address of the concept - a number, a beat, and references to each neighbour. This is a long list, but it guarantees that by each member of the frame we can generate all the other participants and even their specific images. So, a week ago at the club there were tables, glasses and people. The people were John, Anna, Ilze, and Robert. The glasses were long but the tables were round. It is very approximate because the memories of the party visually will be completely different but this is only an example. Obviously, all concept-related images will be very approximate because they will depend on the number and time of the observations because at each moment we experience another image - frame and everyone must find all the necessary concepts that must be employed, but the concepts for the creation of images is limited in time and as a result, everything is semi-finished (if a concept has to produce a pre-created image - a person or a piece of furniture seen before, then it happens faster and more fully - it is very east to prove). Therefore, in many cases, witnesses can not describe much of what they have seen because things in their memory are approximate.

In general, it seems that I have succeeded in formulating - describing how we can find the right way back when walking along an unfamiliar city street from just seeing a well-known corner.

Association chains

If I have to remember a certain frame from before then I have to try to remember what it was related to - a particular person, thing, time, place, etc. If one of these mentioned things is more common, then using its beat number we reach the goal. It is usually called the associative memory - to remember John I have to remember the table at which we celebrated the Midsummer and then John is also remembered. Of course, many things we forget but we keep modelling further - the concepts, their beat numbers and references to neighbours, which we encounter more often, as a float rise to the top of the list, therefore they can all be obtained quickly and effortlessly, but if everything is far off, then the opportunity to remembering it is real only if a member of the frame is connected to someone at the top of the list. It is what happens in reality because we often can not remember a particular surname but it takes time and it just floats up because we have seen a specific vase, which can lead directly to the image of the person you are looking for by referencing them.

According to this model the brain does not forget a thing but they do not have time to re-read the whole database because all the time it is necessary to process new incoming information - to make a duplicate of the observed image and compare it with the observations.

Talent

It is clear that programs that create images can work faster or slower. If a program works faster in a certain field, it can be said that there is talent in this area.

Step of thinking

The thinking step is a matter of opinion because it looks simple but nature works on the principle of the least energy consumption. This model of the Head was created by eliminating all the senses that apply to our physiology - hunger, pain, discomfort, love, etc., which virtually eliminated the motivation for thinking.
If we have a specific frame, we can run a set of concepts in it letting it create new images within the concept within its own corruption and then we will get what we have built internally, because only at this point the concept produces only what is faster and easier to cultivate since another setting was not present. As a result, we have achieved something that fits or does not make sense but it is step of creativity. Frame configuration is the starting condition because it determines which version it will fit into. The next chapter will discuss the step of thinking in depth but there is a whole range of problems that I can simulate here. Still, I have to think how to phrase them better. The saying: "Everything new is created from the old" is quite old but apparently also quite true if we consider that the things discovered experimentally and theoretically the same as before (the dividing and compounding parts of existing one are used too). Of course, there may be a desire to find answers to some questions and start new experiments that will yield results, but when we finish we can assume that it is the same old since the experiments answer the question "How does it happen?" But thinking needs to answer the question "Why is this happen?" and thus the Head must create a model of what is well known (concepts, analogous situations - frames, etc.) that are compatible with the process and outcome of the experiment, and intuitively demonstrates why this is happen. When we know why, we can move on.
It is just guessing what if but in front of us is a difficult task to create a model for a step of thinking and a step of creation on the above-described basis.

Teaching

To begin the conversation on the step of thinking one has to return to memory and recognition and only then move on to the step of thinking. If we put the described model of the Head in another environment it will take plenty of time to until someone accesses the concepts. Turns out that over the course of many hundreds of thousands of years people have approximately learned to guess what and how to show their children so that they become roughly alike. No parent has been able to accurately guess or confirm how it happens so we can assume it as a kind of axiom. So, the teaching method meets great approximity and approximate usable results and problems that are already associated with exponential growth of information. The current model can be trained according to the old pyramidal scheme - a step is taken when the answer is as expected, then comes the second step, which requires perfection of the first step and so on but it is counterproductive, because it consumes an inadequate amount of time and the

trainee will die before he will learn something. This approach only shows that an effective teaching method is possible and that one can never find the best one. This follows a series of theorems from the theory of recursive functions and the theory of inductive proof that we will not mention but accept with faith and an intuitive sense that it is true indeed. In fact, we can conclude that for a few hundred thousand years we have been looking for the best method of teaching and have not found it.

I started with the model of the Head and began looking for how to teach someone to achieve what we expect. The biggest problem is that experimentally it has been happening for many hundreds of thousands of years and now it collides with very difficult problems. People relied on the practice of how they thought it was best to teach.

The Greek academy believed in disputes and the ability to prove a point with logic, observation and other things available at that time. Then monotheistic religions introduced canons and there was only one version - learn and repeat, which prevailed for two thousand years and are still felt today. Of course, there were experiments who created new theories but in education, however, the old formula is used - learn and repeat even with weak attempts to create some kind of comprehension of what's going on. Today are attempts to replace it with role-play in similar situations, so that the student can relate to them. It is not bad but this also leads to inspection of different examples where the student himself does not have a concept about the thing under consideration and the examples. Practically comprehension is left to the learner himself - saving the drowning is the task of drowning itself. The most talented could do it but everyone else could not and can not even today.

Even today, the teaching and learning of STEM subjects is a major issue that is being addressed with great attention. I do not want to throw a stone in the garden of teachers and psychologists because they work in good faith using experiments, assumptions, history, and other things they believe can improve the situation. They work with the student as with a black box and try to guess what and how to show it to achieve the desired result. It has been happening for many years, and very large resources are spent with very low success rates. Many methods and techniques are created but the results are minimal. Of course, just like Newton, Einstein, Bor and other historical persona also today many talented people can.

Spending large resources at low levels of growth suggests that something in general is wrong.

The Head model itself asks for a different approach - we will not try to work with the student as with the black box but look at all the training as an effective method - the search for a way out of the model of the Head, the way it remembers, recognizes and relates things. So, we will look for a way how hypothetical brain will understand best - create concepts, frames, relations etc.

Naturally, there is the possibility of using an analogy if we can show in the model how it works. Seems that the Head should be appointed a new feature - when constructing a new program - concept closest to it would be to use already used circuits - analogues that reduce the use of the resources. We have not observed such ability but if it exists then it should be taken into account. Consequently, in

the design of the model appears an assumption that the Head uses the previously used circuits - recipes or parts to create each new program. This may be a matter of opinion but it works for an assumption. If this is accepted, the teaching should be constructed so that all the new things to be learned are linked to the old, long-established things with existing concepts. So, there will be a useless series of new observations, as they will be replaced by previous already processed ones. This can be done by knowingly providing student the information that what he is looking at is the same what he already knows or by stimulating himself to find/remember it. Again, without language and other forms of information transfer, this chapter remains open until the next step.

Language, pictures and other forms of information transfer

As soon as there is a concept it receives a code - a word of language. Since the concept for each individual has formed differently the word creates a different image. Grammar is associated with new objects - before or after, does it work or did it work etc., which creates relevant programs - terms. It really reflects the ambiguity of language. Science tries to introduce definitions and other ways to make the language unambiguous but not always it is successful, since even large conferences have to use patterns - similarities to show in what sense a particular word - term is used. Very often one word describes a variety of concepts and, in the same way, different terms indicate the same concept. The language according to our model is the image (visual, sound, tactile, etc.) but individual to each of us although may be not too different from the images of others, although the image initiated by a word can also be quite different. We can say that every verbally pronounced sentence is subconsciously transformed into a sequence of frames, in which concepts induced through words are involved. We can not say that there are only word-initiated concepts. There may be something else - meaningful or unsubstantial, which is extracted from each individual memory according to the concepts that took place in some actions. That is why when speaking about one thing, things that are irrelevant come to our mind.

Verbal thinking is about 60 times slower than thinking in images and it is experimentally proven. This phenomenon will have to be remembered when analysing the possibilities of the next model.

We can often pass information with a reference that what you see is the same as the last frame of a particular movie. Then the information is transmitted visually. Or - it is the same you heard in the concerts; then the information is transmitted verbally. You can also can say that it is as rough as a sandpaper and then the information is transmitted at the tactile level.

Verbal expression is an option to roughly pass the information at the level of perception we have imagined but without chances of any precision, it is approximate because each recipient of information will recycle it at the level of his/her experience.

So, with the language we can transfer the information to another but it is very approximate and even within specific, closed theories it will be quite heterogeneous without explanatory models, which also does not guarantee full accuracy.

We all communicate very approximately but still functionally, if we use all the means to specify the compatibility of the information provided and received.

Teaching though language

Since the language creates a series of images, different terms are used in the teaching to create a series of matching images. If the student is given words he does not have concepts for then the following happens - known & known & unknown & known & ... & known is unknown. In such a situation, the student will not always have the opportunity to create an unconscious image - a frame he/she knows. This is one of the basic mistakes in teaching. If the unknown is substituted by words that are about the same but from another field which is familiar to him/her, then it is highly likely that the Head will quickly generate a new, usable version of the program - perhaps a concept in the future. Otherwise, it will be cancelled because the Head all time will be occupied with other things - the current frames. This is also an option to improve the teaching when everything else has long been tried with no visible success. This will really happen if everything will not be done by the teachers but by the student and the Head. The language can initiate the desired images but all empty spaces must to be filled in for each specific version of the Head. Every Head can be fed with information and everything will depend on it. Of course, all our students are showered with unfamiliar terms and the very strange definitions that pupils accept just as unfamiliarly. Later we wonder that there is no understanding and consequent knowledge. With language, we can give an instruction but without the guarantee that it is clearly perceived and implemented, so there is, however, a need for understanding - the concept at any stage of the instruction and in general.

Teaching issues

It is proven that there is no best training method for the model of the Head but it can be proven that there is a teaching method that leads to concepts. Over the hundreds of thousands of years, humankind has approximately discovered the order how an infant, later child should be taught things to get what we want. It works only until we give the concepts and the desire to think. Then come the problems we are seeing today, as there is a heavy legacy of monotonous religion, the memorizing of canons tried to get rid of for a long time; in general - unsuccessfully. This inertia is great and difficult to overcome, as there are a number of teachers who unknowingly stop at the old schemes and it is difficult to break it.
At the moment, all teaching related activities are based on statistics, experiments and assumptions that they seem to bring some improvement. There is a suggestion to try to base the teaching on the model of the Head because at least it has some kind of an option how it is best captured by the brain. The model of the Head and other models - physics, biology and the like, is equally empirical and based only on some experimentally proven things in the recent years, such as the lack of free will and the sorting of observable cases in the brain. It can be argued that it is better to use the achievements of pedagogy and psychology but

unfortunately the practice shows that they provide very little significant progress. Like skiing, classic cross-country skiing, despite many investments, gave a slow increase of speed, but the gliding step led to very different speeds.

What SOMEONE can do?

If SOMEONE can generate image-creating programs for a group objects selected by that SOMEONE, then it must be remembered that an object can be anything that enters the field of incoming information and hence the frame-creating-processes. It means that concepts also arise from the elementary set of objects - the creation of frame programs, if they were observable and that SOMEONE could build a program that stabilizes. In general, this can be attributed to the ability to create different small movies of a single plot - again the concept and opportunity of recognition within the framework of our agreement. It is suspected that this is happening in the nature but within the framework of our agreement we assume that these movies are hypothetically/naturally continued so many things are perceived faster than they will happen, but only for a few tenths of a second. This is to some extent confirmed by the results of the measurements of the lack of "free will." The whole result is, however, a recipe/algorithm/reciprocal function generated by SOMEONE. It does the same thing - it recreates the observed and, on its basis, knows or generates something new by dividing and/or combining, which is equal to the entire observed combination.

SOMEONE by analogy of similar things after the effect of recognition even if it is very weak begins the creation of a recipe/program; if there is no recognition then a new process for achieving recognition of the object and generation of a concept is initiated. Similar things can be interpreted as models, as they depict already familiar in just a slightly different version (remember that movement, moving, axe, love, etc. are also recognizable objects). Thus, we come to the agreement that the patterns are similarities in other areas, which essentially reflect the naturalness of the activity of the investigated field. Naturalness is also a concept of mathematics and is largely in line with the intuitive perception of naturalness - it does or does not happen because it is natural. The model of the Head works on the principle of naturalness - it is natural if we see an analogy from a different field, where it is natural.

So, the basic assumption is that SOMEONE is making a model for each object for its observation set and that these models become concepts when the processes are stabilized. There are many instability options but there begins the concept of building, if it is possible.

SOMEONE really does create a model in a way similar to the physics created by Newton, since it works for a while, remains unchanged and is usable.

Each individual model does the same and everyone lives with it. Everyone has built a program/painter for every single thing we know. It shows it well enough to recognize it, and the versions find similarities from the previously known concepts - models if there are problems with recognition. They can be improved or use as they are if they meet satisfactory high-quality. For each observation, we naturally develop a subconscious movie. The brain actually works with similarities which can be improved to similarities to create a new concept and all the time works

within our framework of models. So, if the brain works on a model-based basis, then the model obtained from the outside can reproduce the next brain-shaped model; the same applies to the model that the learner created in a coercive fashion. The model, as it turns out, is the basis of the brain activity and the communication with the brain is the most successful through a model of similarities.

Conclusion

The fact that everything for each individual is formed individually, approximately and uniquely creates a poorly calculable and recognizable space in which one can communicate with each individual - find common images (using the language can be very deceptive because each word gives a different image), which can roughly create some kind of contact, which in any case will be only approximate. The approximation is reduced by the various terms defined by scientific theories but they also use the words of the current language and it is not possible to avoid the approximation. Pictures and similar situations are more likely to be perceived approximately equal as they can be reproduced for viewing or created with sufficiently good description. Here comes what we call models. The feedback is an alternative model created by the recipient with the question - is that what you meant? If not, a new model should be created; if yes, follows the approval and its iterative forward. There is a good saying is that poor education is the result of poor communication. Teaching materials and aids are also participants of the communication and should not be forgotten.

In general, communication is an iterative process that succeeds only when both parties agree that the model found for both is sufficiently similar. Otherwise, the communication is unsuccessful because everyone stays with their internal model. It is what mostly happens in educational institutions.

It is the worst when it happens in business because then you can not sell your product or can not attract an investor, since everyone is ready to invest the money where they see - understand how to get it back and not just return it but gain a profit. Communication that is based on awareness is the only way to reasonably pursue your business goals. But there is a but. There are situations when something works fast and satisfies most of the individuals. Then something new is offered, which requires the preparation of new programs/preparation of drawings to rise to a new level that will bring more benefits to everyone else and for themselves. This requires SOMEONE'S effort because new programs/drawings must be designed. The principle of the least energy consumption is triggered and nothing happens without serious incentives because it is good as it is. The same thing happens with new inventions - they are taken into account only at the last moment when there is no other choice - an obvious stimulus - survival (it can also happen when someone rarely has a vision of how to get a lot of money from the new idea) and everything starts to depend on the whole change. This obvious "blindness" is SOMEONE'S laziness not to work unnecessarily, since the head operates on the principle of the least energy consumption. Nothing happens without incentives. Everything focuses on incentives that create thinking that is otherwise not necessary. Hunger is also an inducement that creates thinking, as

well as discomfort, including discomfort that is not the desired comfort. Thinking is a phenomenon created by discomfort when SOMEONE starts operating the former frames and complements them with artificially created discomfort deleting frames - future visions. How this SOMEONE does it we do not know yet but SOMEONE can play any former frames and compliment them with everything that pops into the mind. This again is a conversation about the incentives, which is the weakest part in this model because it was not designed taking into account the physiological and other living conditions. The main thing is that SOMEONE can do it and he/she has everything to do it.