

Creativity and critical thinking in the classroom

‘Productive creativity’ arises when we apply critical thinking to creative thinking

by Ana Moreno Salvo

INTERVIEW WITH ROBERT SWARTZ

Some time ago, David Perkins and you wrote some ideas about the need to teach ‘good thinking’.

What, to you, is a good thinker?

David and I met at Harvard when I was a graduate student. We were both very sensitive to the fact that most people don't think well. They make quick decisions, snap judgments and mistakes. For example, in an ad for breakfast cereal, it says ‘this is a delicious cereal’ or ‘it is as beneficial to eat a spoonful of this cereal as it is to

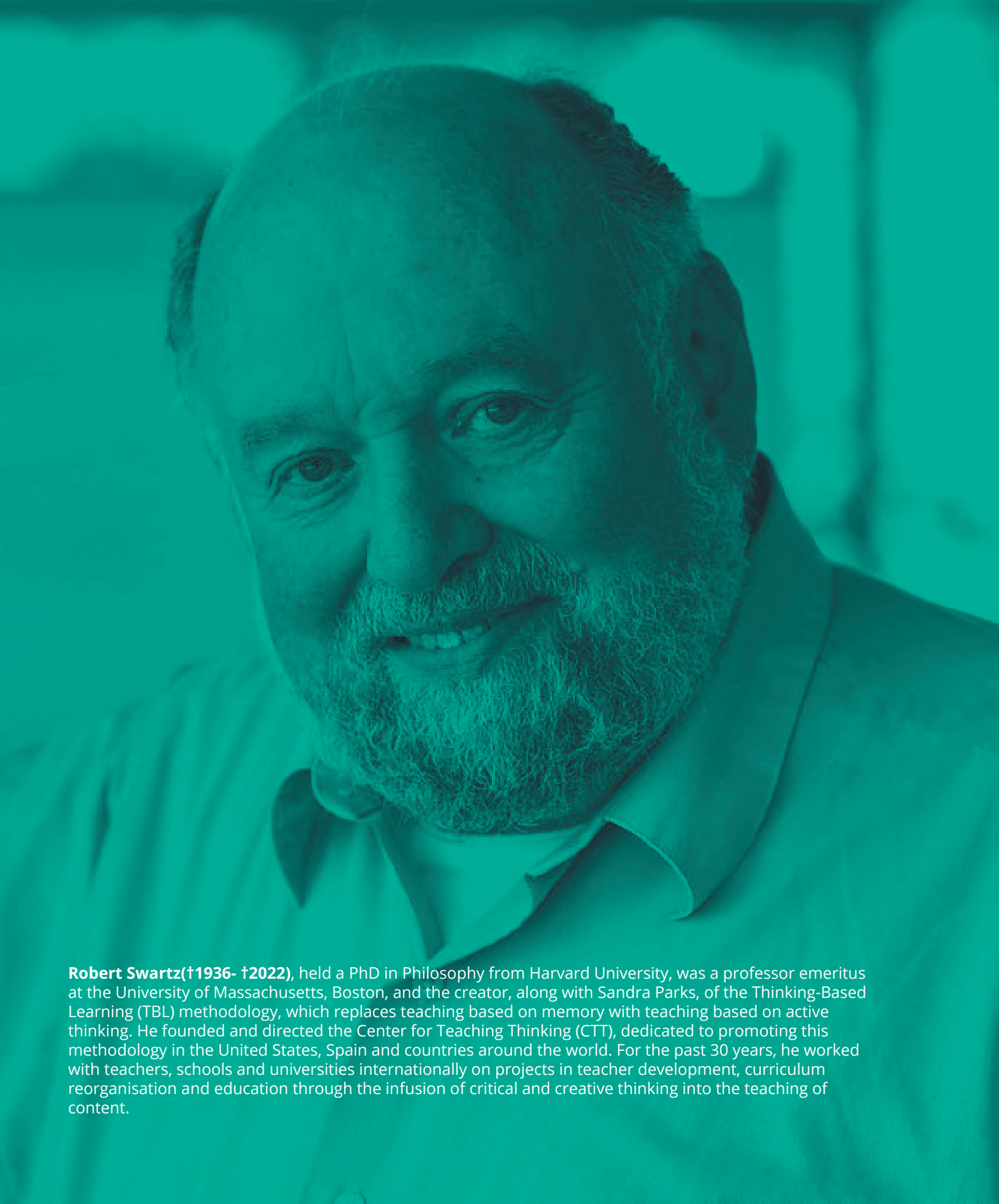
eat an apple’ next to a picture of an apple that looks delicious. The message is designed to make me decide that it is a good idea to buy this cereal. Now research has been done that shows that if you eat a certain type of cereal every day, after 20 years there is a chance that you will develop cancer. What David and I realised is that most people make decisions this way. They think good things, but don't ask themselves, are there any disadvantages? We realised that this was true of most types of thinking and decided that it

would be a good idea to help them develop the habit of asking not only if there is any good, but also if there is any negative consequence, that is, to learn how to think better. It was about figuring out how to teach students so that they learn early in their schooling how to really think more carefully when making decisions, when solving problems, when thinking about how something works and so on.

Could you give us a definition of creative thinking? How does it relate to critical thinking, if at all?

Thinking creatively is one of the different types of thinking that we need to learn to do well in different circumstances. It implies having new, original, creative and different ideas.

Many people do not think well, because they don't ask about disadvantages. They make quick decisions, snap judgments and mistakes



Robert Swartz(†1936- †2022), held a PhD in Philosophy from Harvard University, was a professor emeritus at the University of Massachusetts, Boston, and the creator, along with Sandra Parks, of the Thinking-Based Learning (TBL) methodology, which replaces teaching based on memory with teaching based on active thinking. He founded and directed the Center for Teaching Thinking (CTT), dedicated to promoting this methodology in the United States, Spain and countries around the world. For the past 30 years, he worked with teachers, schools and universities internationally on projects in teacher development, curriculum reorganisation and education through the infusion of critical and creative thinking into the teaching of content.



The mere fact that you come up with these creative ideas is the practice of creativity. Critical thinking, on the other hand, consists of trying to think about ideas and asking ourselves if they are right, if what we are saying is true or true. In creative thinking, we try to come up with something new, original and interesting, and in critical thinking we ask ourselves, are these creative ideas good ideas? I like to work on creative thinking in what I call 'productive creativity', which is coming up with new and original ideas that work, that move our lives forward. And that means applying critical thinking to the creative thinking we have practised.

For example, you have a problem that no one has been able to solve, or it's a new problem that has just

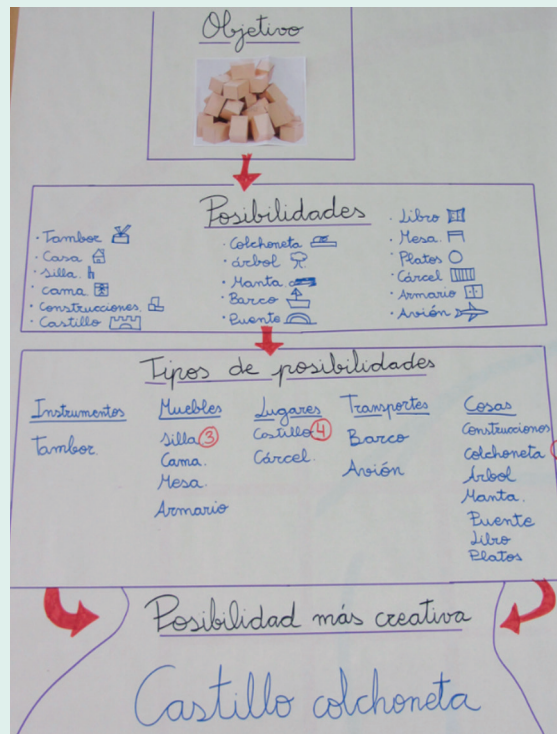
arisen and needs to be solved, so you have to use creative thinking to try to come up with some original ways to solve that situation. Critical thinking then has to be applied to determine whether the proposed solutions will work.

I think it is important to emphasise the idea of 'productive creativity' when we are trying to come up with new ways of doing something. We have tried every possible way we know of and it doesn't seem to work. So we try to exercise creativity, but we want to make sure that the creative ideas we come up with are productive.

He is one of the world's leading experts in the teaching of thinking, and his books are very popular in schools. His dedication to teacher training on five continents has given him a privileged knowledge and experience on how thinking is taught in schools. What do you think are the keys to teaching thinking?

When I started in the United States, in Massachusetts, I was a faculty member at a university, and that limited me. I wanted to go to schools all over the world, work with their

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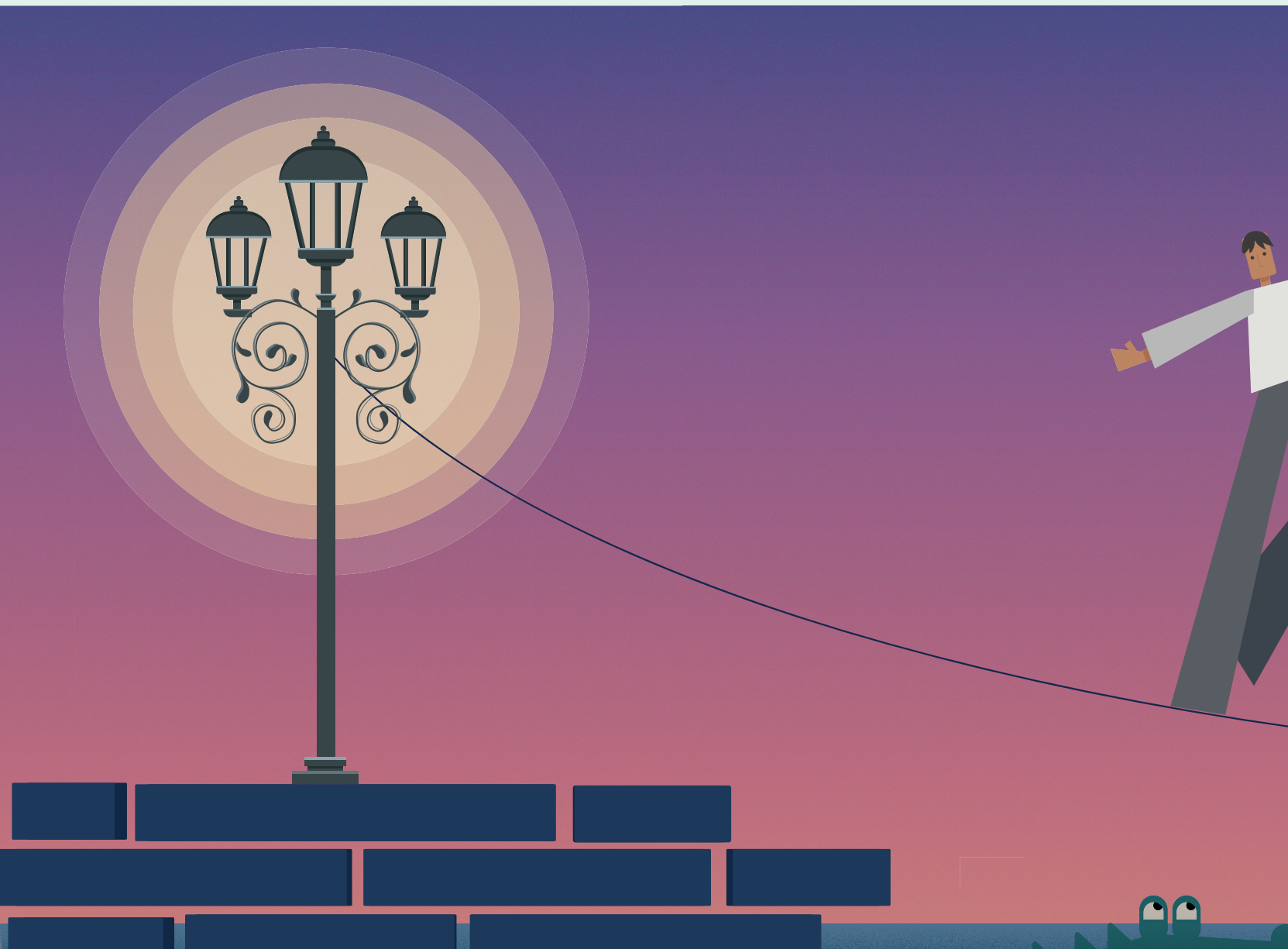
Productive creativity means applying critical thinking to the creative thinking, coming up with original ideas that work

teachers, and show them everything I had discovered and what I had learned from other teachers to make it all work. I aimed to help them put this into practice in their classrooms, to help teachers learn how to teach children to be better thinkers. So I got permission from my university and started traveling and turned the schools into what I call 'Thinking Schools'. I created the 'Center for Teaching Thinking' and

a certificate to certify that these schools taught not only content but also how to think. Eighty to 90% of the teachers in these schools teach all their content through thinking. We have developed a technique, TBL (Thinking-Based Learning), for teachers and their students to learn how to do this, and it really works.

The approach starts with thinking about what real learning is. I then ask them to pass the challenge on

to the students and ask them: How are you going to learn this? What questions do you need to know how to answer to think about it well and come to an acceptable conclusion? Teachers work together and find the technique of learning to think that will allow them to transform learning into thinking to learn. They should not provide the thinking strategy to the students, but instead they should challenge them to find the questions they need to answer in order to think about the problem at hand. They should make them aware that they are thinking right, that the answer will come and in the end the thought will be good. They do



not memorise a textbook but think conscientiously to get good answers. For example, the TV in your house or your car breaks down, and you ask yourself the question: Why did it stop working? This is a good question, and students are interested in it and try to figure it out. To do so, they have to develop a plan. This can be done with a lot of content; it involves challenging students to figure out the cause of an event, to be careful and to think about the possible reasons why the TV has stopped working. Let's explore each of them. In this way, students develop what I call a thinking map. This is a set of questions or

procedures that they believe they should follow, things to find out in order to decide why something happened. There are other types of thinking such as problem-solving, decision-making and predicting consequences. Students realise that they themselves can learn content and explain it using the thinking maps they create. Thus, they learn to be guided in their thinking and to do it carefully and well, so that the conclusion they reach or the

decision they make is something they can feel not only proud of but they know is right.

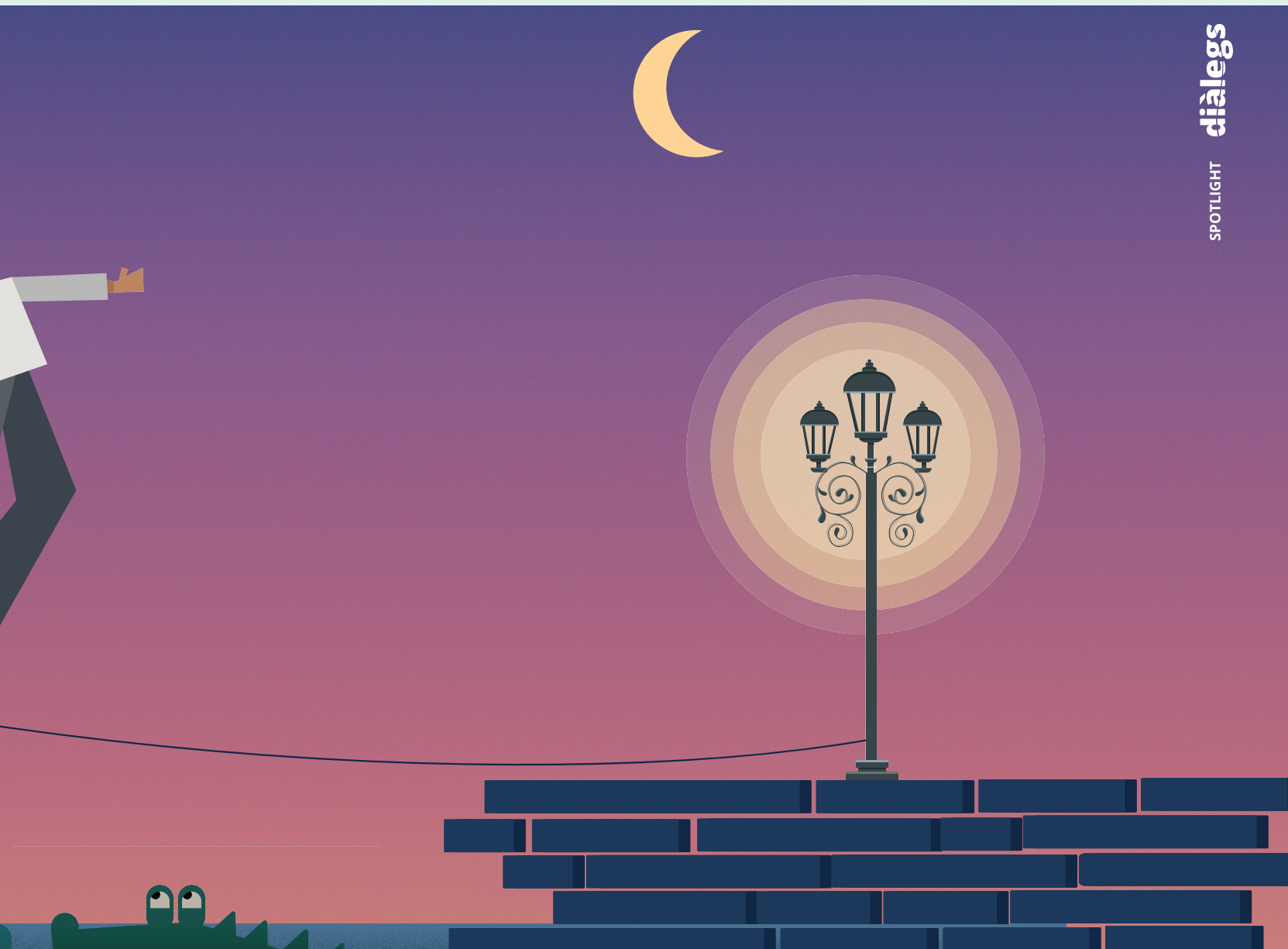
Do we need creative thinking in other thinking skills?

We don't need creative thinking for all types of thinking, but that doesn't detract from the fact that it is extremely important. In fact, the main successes we humans have had in advancing lifestyles in the development of our large cities has

Thinking maps: They challenge students to find out the reason for an event and learning to think

44
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been through creativity: not knowing how to do something and then learning to think creatively, coming up with new ideas, figuring out if the creative ideas are going to work and putting them into practice. We live the lives we lead now thanks to our ability not only to generate interesting creative ideas that may or may not work but also to promote 'productive creative' ideas that we later discover will work. And that is humanity.

To me, the question is: What can we do in our classrooms to help students develop 'productive creativity' and be able to do it and want to do it, to be motivated to do it well?

The way you explain it seems easy, but it is probably not so easy.

Naturally, these changes do not happen overnight. There is a safety valve, a set of processes that are often called metacognition, that is, the ability to think about your thinking, about how I have thought, to decide what questions I should ask. Teaching good thinking involves asking students to develop their plan, then implement it, see what happened, while thinking about it step-by-step and asking themselves if it worked. If it hasn't, a new question must be asked: How could we do it differently? The teacher has to help students to learn on their own, to do it well. This is how they learn how to learn. After doing it a couple of times with the curricular content, the teacher may disappear. The students realise that they can do it by themselves, and they repeat it until they don't need to practise anymore. This gives rise to the skill or ability to take decisions effectively

The great successes we have had in the advancement of lifestyles have been due to creativity

or think 'creatively-productively' or any other type of thinking. They learn it at school, and then after practising it, it becomes an automatic way of thinking.

Could you briefly describe what a good lesson to develop creative thinking would look like?

All students need to be creative thinkers; if they want to be practical, if they want to help change the world, they need to learn to develop productively creative ideas that solve problems or situations. I will briefly explain an experience that took place at a school: the teacher¹ came up with the idea of having the students imagine a person who is dedicated to helping other people with problems, like a person lost in the desert, or one who has broken their leg. He told them, 'You have to come up with creative ideas that will save the lives of these people using what you have learned in school'. A student said that someone is climbing the Matterhorn in Switzerland and has broken his leg. But he has a small box in his pocket with a green button on it, presses it, and it sends a signal to base camp where a drone begins to buzz and soar. It is a contraption with the necessary medical supplies for this type of situation that flies to a point from which the box emits the signal. The injured man presses two more buttons and the packages at the bottom rotate. One of them opens, and a set of supplies for someone with a broken leg head toward this

person. There are bandages, splints, folded crutches that you can use to put under your shoulders and go down the mountain and to save him. The students in the class told him, I don't think it's going to work, we've studied about Switzerland, about the mountains and the Alps, and we've learned that it's very windy on a mountain like the Matterhorn. The fact is that they tried to do it, they tried to fly the drone, all the students in the group were convinced that it was going to work, because using their laptops they figured out the wind currents. And I thought, these guys are learning not to make snap judgments, because even if it sounds right, they need to figure it out in reality. I thought it was a wonderful example of the use of TBL, an example for all of us.

Note

¹ Pablo Carrión, Lope de Vega International School

Teaching good thinking involves: developing and implementing the plan, and seeing what happened and whether it worked

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