

# “Learning how to learn is the core of what we have to teach our students”

Interview by [Caroline Smrstik Gentner](#)  
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*Physics teacher Patrick Poscio found himself reviewing material again and again with his students, so he devised a system to help students understand their own learning patterns and use that awareness to retain knowledge better.*

Caroline Smrstik Gentner: *What inspired you to create a new learning methodology?*

Patrick Poscio: I've been teaching at a public high school in Sion, Switzerland for 20 years and have the feeling that the student population has changed in the last five years or so. The students are just as intelligent as before, but have a harder time studying and retaining what they learn.

This concerned me, because learning how to learn is at the heart of what we have to teach our students at this level of schooling. We need to teach students how to build knowledge by putting together information absorbed in school with what they learn outside the classroom. When our students master that, they become independent: they will be effective not only in their later studies, but also in their working life.

CSG: *So you decided to look into neuroscience for your answers.*

PP: Exactly. Think about studying as a job; you have to use the tools you have at your disposal to do the job well. The basic tool for a student is the brain. That was my starting point.

## “We need to teach students how to build knowledge by putting together information absorbed in school with what they learn outside the classroom.”

The students I meet have never officially learned how to learn. They have developed their own way, acquired some good habits and some bad habits. Cramming facts the day before an exam doesn't help them remember what they've learned over a longer period of time. Most students think that success is associated with innate talent, but we know from cognitive neuroscience that this is not true.

The methodology C.R.A.C. focuses on four main points: understanding (“Comprendre” in French), remembering (“se Rappeler et Retenir”), applying what you've learned (“Appliquer”), and consolidating the knowledge (“Consolider”). The essence of C.R.A.C. training is to realize that by working methodically, anyone can become a “crack” in their subject.

CSG: *How do you convince students that they can succeed with this method? And what about other teachers?*

PP: First the students take a series of questionnaires that shed light on their studying habits. I also developed a MOOC (Massive Open Online Course) for students and teachers that presents video reports on the latest findings in neuroscience. And then we work on systematically applying these findings through reflection and metacognitive activities and tools (e.g., survey and immediate feedback; structured self-assessment of study preparation after taking a test).

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The students must be willing to analyze their habits truthfully, and to drop habits that are not good in favor of new habits. Also, they have to accept some difficulty because that's what cognitive neuroscience tells us: to learn, there must be something new or difficult.

For teachers to accept and use this method, there are two prerequisites: one, you have to have some basic knowledge of neuroscience in order to convince students; and two, you need more time. Since I decided to offer C.R.A.C. training to all my students, I've had to reduce the physics teaching time slightly.

CSG: *Has there been a change in student performance and in general mindset at your school with C.R.A.C. training?*

PP: Not everyone at my school is using this method yet: we've used it for students who are having difficulties, and all of my physics students go through C.R.A.C. training as well. But in these groups, there has been improvement in learning methods and in performance.

## **“As a teacher, you have to be convinced about what you do because if you are not, you can't persuade the students.”**

Last year, I created teaching modules for each of the aspects of the C.R.A.C. method so that colleagues who want to start introducing the concepts can do so in their classes. And a general training program for all teaching staff, given by a professor of cognitive neuroscience, started last year.

Additionally, the university for teacher education in my canton has started to integrate cognitive neuroscience into the initial teacher training, which is a good sign. As a teacher, you have to be convinced about what you do because if you are not, you can't persuade the students.

**Patrick Poscio** is a physics teacher at the Lycée-Collège des Creusets in Sion, Switzerland. He is one of the Spotlight Switzerland 2019 award winners.

The Lycée-Collège des Creusets (LCC) is a competitive public high school in Sion, Switzerland, that prepares students aged 15 to 20 for university study.

**“Devenir un C.R.A.C.”** is a learning methodology that equips students with the skills necessary for retaining knowledge over the long term. The name is derived from the French *Comprendre* (understand), *se Rappeler et Retenir* (recall), *Appliquer* (apply) and *Consolider* (consolidate). The first self-directed learning tool was created to support students in the transition from secondary to higher education. The method was further developed for use by all students who were having difficulty with their learning methods.

**“Devenir un C.R.A.C.”** was one of the ten **Spotlight Switzerland** projects presented at the **Hundred Campus Seminar** on 30 October 2019 in Zurich. The prizewinning projects highlight emerging best practices for digital transformation in the schools. The initiative is a collaboration between We Are Play Lab Foundation, Gebert Rüt Stiftung, Jacobs Foundation, Stiftung Mercator Schweiz, Beisheim Stiftung, digitalswitzerland next generation, and the Zurich University of Teacher Education.

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