As Professor Jolles sees it, the best result of all this is the recognition that there are several ways to reach your goal, that is the key to success in education. For example, Professor Jolles discovered that your brain is not fully developed until somewhere between the ages of 20 and 25, and usually a little later in boys than in girls. In that context, he launched the metaphor of a "slow-growing tree that may ultimately become the tallest". This single image captures one of his key scientific findings of the past 15 years: that the pace at which the brain develops and matures differs for each individual. It is only around the age of 15 that the last part of the prefrontal cortex becomes active; the control room that facilitates cooperation with many other centres of the brain and enables us to improve our planning and decision-making, and to make better choices. This is why Professor Jolles has reservations about new teaching methods at secondary schools in which pupils are largely expected to manage and organize their own learning, with the result that they sometimes get much less from their school career than they could have. Professor Jolles is pleased that these new styles of learning have already faded from view.

"Many educational theories are actually philosophies, based on thin air"

Professor Jolles has spent part of his time in recent years presenting this message in the media spotlight. He travels the length and breadth of the country to advise government bodies, schools, colleges and educational companies. This enables him to tune in to practical questions from these professions, which he can then use to go in search of a scientific answer. In 2011, all this effort earned him the VU University Amsterdam Societal Impact Award.

Professor Jolles is convinced that there is plenty of room for educational neuropsychology and usually a little later in boys than in girls. In that context, he launched the metaphor of a "slow-growing tree that may ultimately become the tallest". This single image captures one of his key scientific findings of the past 15 years: that the pace at which the brain develops and matures differs for each individual. It is only around the age of 15 that the last part of the prefrontal cortex becomes active; the control room that facilitates cooperation with many other centres of the brain and enables us to improve our planning and decision-making, and to make better choices. This is why Professor Jolles has reservations about new teaching methods at secondary schools in which pupils are largely expected to manage and organize their own learning, with the result that they sometimes get much less from their school career than they could have. Professor Jolles is pleased that these new styles of learning have already faded from view.

CONTROL ROOM
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SMOKE BOMBS
Professor Jolles is a good example of his tree metaphor. "I was very inquisitive as a child. I got up at half past four in the morning to go beachcombing. I tinkered around making all kinds of things, from flares to smoke bombs. I even stuffed birds! But in the second year of high school, I had to repeal a year. I got top marks for sport and drawing, but every other mark was well below par. Luckily the teachers recognized that I had the ability, but I spread my attention across all my interests. This allowed me to develop a very broad range of skills." At university, he was no different. Professor Jolles studied chemistry while completing a degree programme in psychology on the side, which included not only a research-oriented specialization in cognitive and neuropsychology but also a treatment-oriented track in clinical psychology. Along the way, he also picked up the equivalent of a Bachelor’s in philosophy. He encountered people who inspired him, and he developed ideas.

"It wasn’t until I was 23 that the penny dropped. Then I was able to start making choices within the abundance of things I was involved in." On the basis of his own experience, Professor Jolles advocates scope for personal interests, so that young people can gain a wider range of experience. He believes that such scope is sadly lacking in today’s primary, secondary and higher education: "The key is an inquiring mind. The brain wants to be exposed to new things. Let children and young people see where their curiosity takes them!"

SHOPPING AROUND
His own broad-based development made him the scholar he is today. He has a reputation for building bridges, not only between different fields but also between science and professional practice. "My background and experience have given me an understanding of the different languages that scientists speak," says Jolles. "That makes it easier for me to shop around in other people’s scientific stores.

He started building bridges at Maastricht University, where his achievements included setting up the first Memory Clinic, the first Alzheimer Centre in the Netherlands and the Brain & Behaviour research institute, all as part of his research into ageing and diseases of ageing. Since the mid-1990s, he has taken on a second focus: children and adolescents. He discovered an area that was almost completely uncharted, one he may even have come up with himself: educational neuropsychology.

A NEW APPROACH TO TEENAGERS
With the latest scientific insights from biology, biopsychology, neuropsychology, developmental psychology and many other disciplines, he wants to make sure we treat children, teenagers, adult learners and the elderly differently. At the core lies the principle of lifelong learning. He is already seeing successes. "I’ve noticed that the education sector is paying more attention to the fact that children of twelve still have over ten years of maturation ahead of them. Even young adults are not ‘fully formed’. You continue to adapt to an ever changing environment. We are able to do this because our brains are malleable.”

FROM NEUROPSYCHOLOGY TO BRIDGE BUILDER
In 1985, Jelle Jolles became the Netherlands’ first professor of neuropsychology, at Maastricht University. He was co-designer of a rapidly growing field, as a researcher, practical trainer, director and trainer of a new generation of scientific specialists. This new field of research was no longer restricted to patients but also encompassed healthy individuals with functional disorders, such as sleeping problems or drug dependency. Children with learning disabilities and gifted children were also included in the field. In 2002, Jolles became President of the Brain & Learning Commission at the Netherlands Organization for Scientific Research (NWO). In 2004, the committee organized Brain & Learning Week, which had a major influence on the development of this field of research. One significant result of this was the NWO’s LEREN programme (within the National Initiative for Brain & Cognition NICH), which Jolles initiated and still runs.

On his arrival at VU University Amsterdam in 2009, he set up the LEARN! institute, which brings together PhD researchers from many scientific disciplines: from neuropsychologists, psychiatrists and cognitive psychologists to linguists and education specialists. He is proud that, in doing so, he has created the conditions for reciprocal exchange and building trust in each other’s skills. "We are moving towards a model in which it’s not the neuroscientists or the behavioural scientists or the social scientists who are right. They are all right."