



**Elsbeth Stern**

Elsbeth Stern has been Full Professor for Research on Learning and Instruction at the Department of Humanities, Social and Political Sciences, ETH Zurich, since 2006. She is a cognitive psychologist who has been investigating the acquisition and use of knowledge for over 20 years.

# “YOU HAVE TO BE FIRED UP WITH ENTHUSIASM”

Intelligence researcher Elsbeth Stern talks about the relationship between talent, intelligence and industriousness and how our society can better tap their potential.

INTERVIEW Roland Baumann

*Professor Stern, would you describe yourself as talented?*

You can define “talent” as “realised potential”. Since I’ve had some success as a scientist, I would say “talented” applies to me by definition (laughs).

*What is your talent?*

I can get to grips with complex subjects and draw conclusions based on what I find.

*When did you discover your talent?*

From a young age, I’ve delighted in getting to the bottom of things. Even in primary school, I realised that I was good at maths and especially good at understanding what I read.

*What first piqued your interest in talent as a subject for study?*

I became interested in psychology very early on. At school, my teachers gave me the impression that the natural sciences could explain anything and

everything. But I also knew that we didn’t understand human beings very well. That’s why, against the advice of my teachers, I decided to study psychology. And it’s a subject that continues to fascinate me to this day.

*What exactly does “talent” mean?*

Talent gets fairly rudimentary treatment in psychology. If it’s studied at all, then it’s as a special ability in a particular area, such as music or sport. When psychologists consider intellectual achievements in, say, mathematics, then they focus on intelligence, meaning the general ability to think and learn. Intelligence tests consist of verbal, numerical and visual-spatial tasks. But performing well on numerical tests is still no guarantee of a career as a mathematician. To truly excel in this area, you of course have to be highly intelligent, but you also need a specific interest in the subject.

*You mentioned interest. Does this imply industriousness?*

Absolutely. That is a definite requirement for high performance. You have to be fired up with enthusiasm for

something. No-one can excel in an area without devoting a great deal of time to it. That's why we prefer to talk about expertise rather than talent.

*Some children are described as "highly gifted". What does that mean?*

"Highly gifted" is a term applied to the two percent of people who are the most intelligent, meaning those with an IQ over 130. This is a convention based on intelligence research. There are a few ways to recognise intellectual giftedness; for example, highly gifted children learn very easily. They learn the alphabet more or less on their own and read for fun; they can already do maths that they aren't learning in school yet. I should note that for the purposes of intelligence research, you can't reliably diagnose this level of ability until the child is about ten years old. Some children have an IQ of 130 when they're eight and then two years later it's down to 125. It also has to be said that a child with an IQ of 125 can develop this gift only if he or she is given proper intellectual stimulation.

*What do you mean by that?*

These children need intellectual challenges, which a good school is able to provide. Good schooling can also compensate for deficits in the child's home life. Our society has some children who are genetically predisposed to be highly intelligent, but are unable to develop this natural ability or translate it into good marks in school. It's a major problem. I'm trying to help the situation, and educators also have to get involved.

*Could you name an example?*

Take a child who is much better in maths than they are in speaking or

writing. This can be an indicator that they possess more intelligence than is finding expression.

*What is the best way to nurture and encourage a child like that?*

The child needs to work on their weak areas. The teacher should speak with the parents and tell them that their child is doing well, but needs some extra help with language skills. A psychological assessment can reveal if the child performs well on a non-verbal intelligence test. The government also has a certain obligation here.

*Why is that?*

For the individual, it's not necessarily a bad thing if they're not working to their full intellectual potential. It

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might even afford them a greater degree of latitude and allow them to work more independently. But it means these intelligent people are absent from other areas. Society as a whole suffers when there are fewer intelligent people in high positions.

*Are there certain groups that need special support?*

It's often children with an immigrant background who do just fine in life, but could actually achieve even more. People say, the child made it through secondary school, our job is done. But we should be helping them get to a Gymnasium that will prepare them for university. There's potential there.

*Are there gender-specific differences regarding intelligence?*

Generally speaking, women have better language abilities and men are better at visual-spatial tasks. To what extent that's nature or nurture is hard to say. However, men are more likely to have an intelligence profile in which their spatial and numerical abilities far outshine their linguistic abilities.

*Is that why ETH has more male students?*

That profile could certainly fit the typical engineer. Women who have strong mathematical and visual-spatial abilities also usually have excellent verbal abilities. You might say that in contrast to men, women have a choice. Perhaps they feel they have less support when they go into mathematical areas. There is certainly strong potential here, both for ETH and ultimately for society. ○