

**LifBi lectures**  
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### **What exactly makes the difference? The impact of intelligence on academic learning**

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In its beginnings, psychometric intelligence was closely intertwined with institutional academic learning as it takes place at schools. The need for intelligence tests appeared as a consequence of compulsory school education, which raised concerns of selective placement. However, it took researchers several decades, before they recognized that intelligence does not solely characterize an individual's cognitive capability, but rather has also to be seen in the light of the respective environmental and cultural background. In spite of their common roots, psychological research on intelligence and on education have increasingly grown apart from each other in the past decades. While there is overwhelming evidence for intelligence to facilitate and speed up all kinds of learning, little is known about qualitative differences in learning trajectories between more or less intelligent students. Academic learning, far and foremost in Science and Mathematics, does not reveal in just accumulating knowledge, but rather is the result of conceptual restructuring. The challenge all learners experience is switching from characteristic to defining features of concepts. Independent of an individual's intelligence, this process of conceptual change needs instructional support. Data on the effects of intelligence on exploiting learning opportunities will be presented.