

## Foundations of memory: Bridging cognitive science to education

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### Summary

Today, the field of *Cognitive Psychology* is in the midst of a major outpouring of scientific work on the processes of thinking and learning and on the development of improving long-term learning. And recently, researchers have begun to realize that working in collaboration with educators will most improve the strategies used in the classroom. Two major goals exist: (1) to broaden the interaction between researchers in the laboratory and educators in the classrooms, and (2) to improve long-term maintenance of knowledge in students. The goal of this session will be to provide the participants with a general knowledge of the foundations of memory research and also to begin a discussion on the issue of applying effective strategies to the classroom.

A crucial development in the Cognitive field has been to promote the *Metacognitive learner*. Metacognitive strategies include procedures where teachers encourage students to take active control of their own learning by being aware of their own strategies. Students may also use strategies that may seem unfavorable in the classroom or for the short term, but are in fact beneficial for long-term learning and in novel situations.

The following are a few effective long-term learning strategies that will be discussed under the general topic of Metacognition: The *practice* effect, the *spacing* effect, the *generation* effect, etc. Tying these ideas together is the notion that strategies that benefit short-term performance may harm long-term performance. More specifically, "effort, variability, and process" when learning (rather than comfort, constancy, and performance), may be the key to the long-term maintenance of knowledge.

At the end of the session, participants will, hopefully, have the basic knowledge of the cognitive strategies and data that are effective for long-term learning, their applications to school-aged children, and the ways in which students' metacognitive strategies may be developed in the classroom. And, through discussions that take place during and after the session, we hope that the gap that exists between researchers and educators will be diminished.