

Bransford et al *How People Learn* (pp.14-21). First edition of this book is online at <http://www.nap.edu/openbook/0309065577/html/index.html>

Findings	Implications	Actions
<p>Students come to class with preconceptions about how the world works. If their initial understanding is not engaged, they may fail to grasp the new concepts and information that are taught, or they may learn them for purposes of a test but revert to their preconceptions outside the classroom.</p>	<p>The teacher must draw out and work with the pre-existing understandings that their students bring with them.</p>	<ul style="list-style-type: none"> -Teacher must create activities so that student thinking is revealed. -Use formative assessment to make students' thinking visible to themselves, their peers, and their teachers. Opportunity for feedback and clarification. -Teachers need to learn to recognize and work with predictable misconceptions.
<p>To develop competence in an area of inquiry, students must: (a) have a deep foundation of factual knowledge; (b) understand facts and ideas in the context of a conceptual framework, and (c) organize knowledge in ways that facilitate retrieval and application.</p>	<p>Teachers must teach some subject matter in depth, providing many examples in which the same concept is at work and providing a firm foundation of factual knowledge.</p>	<ul style="list-style-type: none"> -Superficial coverage must be replaced by in-depth coverage of fewer topics so that key concepts are understood. -Teacher must be familiar with the process of inquiry and terms of discourse the discipline, but also have a grasp of the growth and development of students' thinking. -Assessment (standardized testing) must test deep understanding rather than surface knowledge.
<p>A "metacognitive" approach to instruction can help students learn to take control of their own learning by defining learning goals and monitoring their progress in achieving them.</p>	<p>The teaching of metacognitive skills should be integrated into the curriculum in a variety of subject areas.</p>	<ul style="list-style-type: none"> -Integration of metacognitive instruction with discipline-based learning can enhance student achievement and develop in students the ability to learn independently. -Developing strong metacognitive strategies and learning to teach those strategies in a classroom environment should be standard features in the curriculum of schools of education.