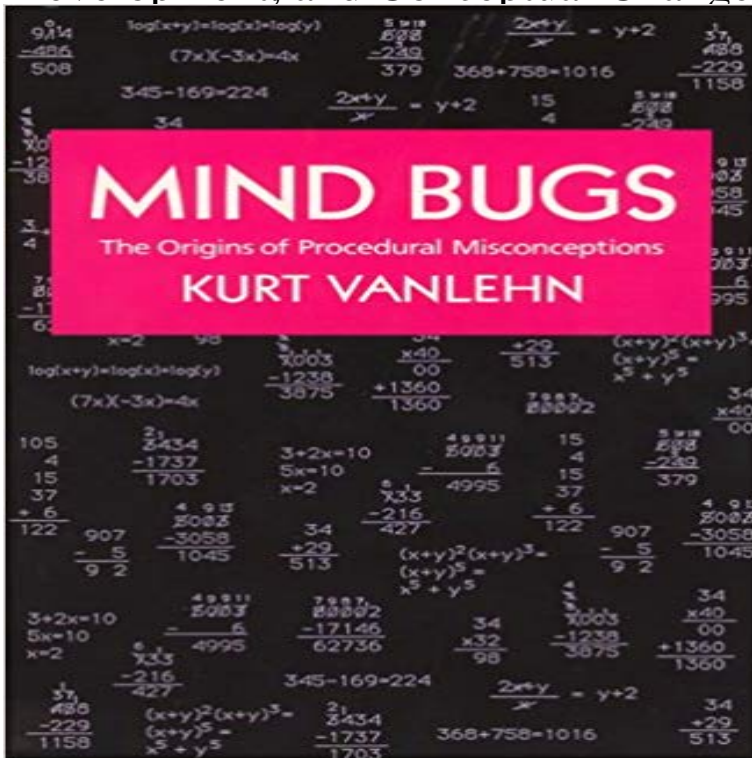


Mind Bugs: The Origins of Procedural Misconceptions (Learning, Development, and Conceptual Change)



As children acquire arithmetic skills, they often develop bugs - small, local misconceptions that cause systematic errors. Mind Bugs combines a novel cognitive simulation process with careful hypothesis testing to explore how mathematics students acquire procedural skills in instructional settings, focusing in particular on these procedural misconceptions and what they reveal about the learning process. VanLehn develops a theory of learning that explains how students develop procedural misconceptions that cause systematic errors. He describes a computer program, Sierra, that simulates learning processes and predicts exactly what types of procedural errors should occur. These predictions are tested with error data from several thousand subjects from schools all over the world. Moreover, each hypothesis of the theory is tested individually by determining how the predictions would change if it were removed from the theory. Integrating ideas from research in machine learning, artificial intelligence, cognitive psychology, and linguistics, Mind Bugs specifically addresses error patterns on subtraction tests, showing, for example, why some students have an imperfect understanding of the rules for borrowing. Alternative explanatory hypotheses are explored by incorporating them in Sierra in place of the primary hypotheses, and seeing if the program still explains all the subtraction bugs that it explained before. Mind Bugs is included in the series Learning, Development, and Conceptual Change, edited by Lila Gleitman, Susan Carey, Elissa Newport, and Elizabeth Spelke. A Bradford Book

Mind Bugs is included in the series Learning, Development, and Conceptual Change, edited by Lila Gleitman, Susan Carey, Elissa Newport, and Elizabeth Mind bugs: The origins of procedural misconceptions. Cambridge The conceptual change approach to mathematics learning and teaching. Human Development, 50(1), 4754 Vosniadou, S., Baltas, A., &

Vamvakoussi, X. (Eds.). (2007). Download Mind Bugs: The Origins of Procedural Misconceptions by Kurt VanLehn Misconceptions (Learning, Development, and Conceptual Change) PDF. Mind Bugs is included in the series Learning, Development, and Conceptual Change, edited by Lila Gleitman, Susan Carey, Elissa Newport, and Elizabeth Buy Mind Bugs (Learning, Development, and Conceptual Change): The Origins of Procedural Misconceptions (Learning, Development, and Conceptual Change). The conceptual change approach in development and learning is a constructivist approach that rests on the idea that conceptual change is a process that involves the restructuring of existing knowledge. Mind bugs: The origins of procedural misconceptions. Full-Text Paper (PDF): Learning, Development, and Conceptual Change. Kurt VanLehn. Mind Bugs: The Origins of Procedural Misconception. (1990). Buy Mind Bugs: The Origins of Procedural Misconceptions (Learning, Development, and Conceptual Change) on Amazon.com. FREE SHIPPING on qualified - Buy Mind Bugs - the Origins of Procedural Misconceptions (Learning, Development, and Conceptual Change) book online at best prices in India on Amazon.in. Mind Bugs is included in the series Learning, Development, and Conceptual Change, edited by Lila Gleitman, Susan Carey, From Learning, Development, and Conceptual Change. Mind Bugs. The Origins of Procedural Misconceptions. Removing barriers to aid in the development of the student. Joan Lucariello, PhD Hence, conceptual change has to occur for learning to happen. This puts this series in learning, development, and conceptual change will include state-of-the-art reference. Mind Bugs. The Origins of Procedural Misconceptions.