



## Mind Bugs: The Origins of Procedural Misconceptions

By Kurt VanLehn

Mit Press. Paperback. Book Condition: New. Paperback. 266 pages. Dimensions: 8.9in. x 5.9in. x 0.8in. 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...

[DOWNLOAD](#)



[READ ONLINE](#)  
[ 8.89 MB ]

### Reviews

*Comprehensive guide for pdf fanatics. Sure, it really is play, nevertheless an interesting and amazing literature. I discovered this publication from my dad and i suggested this ebook to learn.*

-- Ms. Isobel Rosenbaum I

*Unquestionably, this is the very best operate by any author. it had been writtern extremely flawlessly and beneficial. You can expect to like the way the blogger publish this publication.*

-- America Gleason