Concept Mapping in Mathematics
Research into Practice
Afamasaga-Fuata'i, Karoline (Ed.)
2009, Approx. 225 p. 200 illus., Hardcover
ISBN: 978-0-387-89193-4

Due: April 2009
66,95 €

About this book
Table of contents
Table of contents


Concept Mapping in Mathematics: Research into Practice is the first comprehensive book on concept mapping in mathematics. It provides the reader with an understanding of how the meta-cognitive tool, namely, hierarchical concept maps, and the process of concept mapping can be used innovatively and strategically to improve planning, teaching, learning, and assessment at different educational levels. This collection of research articles examines the usefulness of concept maps in the educational setting, with applications and examples ranging from primary grade classrooms through secondary mathematics to pre-service teacher education, undergraduate mathematics and post-graduate mathematics education. A second meta-cognitive tool, called vee
diagrams, is also critically examined by two authors, particularly its value in improving mathematical problem solving.

The theoretical underpinnings of concept mapping and of the studies in the book include Ausubel’s cognitive theory of meaningful learning, constructivist and Vygotskian psychology to name a few. There is evidence which suggests that students’ mathematical literacy and problem solving skills can be enhanced through students collaborating and interacting as they work, discuss and communicate mathematically. This book proposes the meta-cognitive strategy of concept mapping as one viable means of promoting, communicating and explicating students’ mathematical thinking and reasoning publicly in a social setting as they engage in mathematical dialogues and discussions.

*Concept Mapping in Mathematics: Research into Practice* is of interest to researchers, graduate students, teacher educators and professionals in mathematics education.

Written for:

Researchers, graduate students, teacher educators and professionals in mathematics education

Keywords:

- Concept mapping
- Mathematics Education
- Meta-cognitive
- Metacognition
- PISA
- TIMMS
- Vee Diagram