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Chapter 7: Conceptual change in learning electricity: Using virtual and concrete external representations simultaneouslyChapter 8: Using static and dynamic visualisations to support the comprehension of complex dynamic phenomena in the natural sciences; Chapter 9: The role of external representations in learning combinatorics and probability theory; Chapter 10: Symbolising and the development of meaning in computer-supported algebra education; Chapter 11: The 'numbers are points on the line' analogy: Does it have an instructional value?

Chapter 12: Use of external representations in science: Prompting and reinforcing prior knowledge activationChapter 13: Visualisation of argumentation as shared activity

Sommario/riassunto

Within an increasingly multimedia focused society, the use of external representations in learning, teaching and communication has increased dramatically. Whether in the classroom, university or workplace, there is a growing requirement to use and interpret a large variety of external representational forms and tools for knowledge acquisition, problem solving, and to communicate with others.Use of Representations in Reasoning and Problem Solving brings together contributions from some of the world's leading researchers in educational and instructional psychology, instruction