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Theory of global and local coherence and applications to geometry.

Pehkonen, Erkki, 21. conference of the International Group for the Psychology of Mathematics Education. ,. 152-159 (1997).

Consider the following statement: “A square with two parallel sides and two equal sides is a parallelogram”. In the study described hereby many students claimed the statement was true. Was it because they didn’t know anything about equilateral trapezoid? In fact, they knew everything about it, but on the moment of considering the statement they didn’t integrate all the pieces of knowledge they hold in their “knowledge base”. Is it possible that people, while relating to statements, will not consider all the knowledge they hold regarding the statement, and not act like “rational thinkers”? And if so, what is the reason to that phenomena? In a research conducted to test this issue one of the basic assumptions was that there is a connection between the limited capacity of the Short Term Memory and the ability to integrate all the pieces of relevant knowledge. The theory that was applied for this matter was The Theory of Global and Local Coherence, which will be described later in this paper.

Classification: D70