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Teaching linear algebra at university.

Li Tatsien, Proceedings of the International Congress of Mathematicians. Vol. III. Higher Education Press, Beijing (ISBN 7-04-008690-5). 875-884 (2002).

Linear algebra represents, with calculus, the two main mathematical subjects taught in science universities. However this teaching has always been difficult. In the last two decades, it became an active area for research works in mathematics education in several countries. Our goal is to give a synthetic overview of the main results of these works focusing on the most recent developments. The main issues we will address concern: - the epistemological specificity of linear algebra and their interaction with research in history of mathematics - the cognitive flexibility at stake in learning linear algebra - three principles for the teaching of linear algebra as postulated by G. Harel - the relation between geometry and linear algebra - an original teaching design experimented by M. Rogalski. (Author's summary)

Classification: H65
Keywords: cognitive flexibility