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Enhancing Students' Attitudes towards Linear Algebra with Technology.

When teaching linear algebra we have to deal with the following well-known problem: while the level of mathematical skills required to work with examples is generally low (students only need to add, subtract and multiply), the number of calculations is usually large. Therefore, working with examples is time-consuming and error-prone if done by hand. Students get tired quickly and lose interest in this increasingly important area of mathematics. The Schmalkalden University Faculty of Business and Economics therefore decided to move its introductory linear algebra course from the classroom to the PC lab, and purchased a Computer Algebra System license that also allows its use on the students' own PCs. A collection of functions was then developed to facilitate teaching by providing functions for the computation of zero matrices and vectors, matrices and vectors of ones, identity matrices, as well as idempotent and orthogonal matrices, "just-in-time", whenever they are needed during the course. Examples will show how beneficial it is, from the very basics to the more advanced topics, to sit in front of a PC in an introductory linear algebra course. (Received September 03, 2009)