

About the Potential of CAS and LMS for Enhancement of Mathematics Education

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Abstract

Mathematics education has undergone partial transformations based on applications of Computer Algebra Systems (CAS) and other related software systems. They have enabled fairly complex mathematical computations and graphics to be done routinely and problem solving environments to be constructed.

Learning Management Systems (LMS) such as ILIAS and Moodle allow to develop a variety of learning scenarios for mathematics courses. The focus is not on simply providing students with well-designed learning materials but mainly on knowledge management and techniques for engaging and motivating students to perform learning activities and reflect on the results. Thus learning is viewed as an effortful and active process of knowledge construction.

The combined use of CAS and LMS appears very challenging to exploit. We consider it as a good opportunity for a major transformation of mathematics education. An educational experience at the Technical University-Sofia towards learning environments for effective didactic models that can contribute to the changing face of mathematics education is represented.

Key words: mathematics education, CAS, LMS, learning scenario, knowledge management