

The Role of Computers in Changing Students Attitudes Towards Mathematics

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Attitudes toward mathematics include students' ideas relevant to their interests, their perceptions of the usefulness of mathematics, their intrinsic interests in the logic or challenge of mathematics and their competence in solving mathematical problems. According to self-determination motivational theory (STD) (Ryan & Deci, 2000) the need for competence is one of the basic motivational needs. Students' self-perceptions of their competence or ability are at the core of several psychological theories aimed at explaining learning gains and achievement-related choices. Positive attitude toward competence is linked to positive affective, cognitive, and behavioral outcomes, and positive intentions to engage in optional mathematical activities. The negative perception of mathematical competences negatively influences students' future career choices, especially in science, technology, engineering, and math majors (STEM). SDT views motivation as being a dynamic, constantly evolving process, in contrast to a static, enduring one that is proposed by other motivational theories (Ryan & Deci, 2000). Hence, mathematical teachers' have to support students' needs for mathematical competence. We shall discuss in the lecture how the effective use of computer softwares can help students to foster their specific mathematical self-esteem.

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