Abstract  Recent research in the field of affect has highlighted the need to theoretically clarify constructs such as beliefs, emotions and attitudes, and to better investigate the relationships among them. As regards the definition of attitude, in a previous study we proposed a characterization of attitude towards mathematics grounded in students’ experiences, investigating how students express their own relationship with mathematics. The data collected suggest a three-dimensional model of attitude towards mathematics that includes students’ emotional disposition, their vision of mathematics, and their perceived competence. In this paper, we discuss the relationship between beliefs and emotions, investigating the interplay among the three dimensions in the proposed model of attitude, as emerging in the students’ essays.