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Students' quality of mathematical discussion and their self-determination in mathematics.

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Summary: Mathematical discussion allows for students to reflect upon math concepts and understand such concepts at a deeper level. This process of reflection requires a certain amount of internalization on the part of the student. This internalization is facilitated by meeting the needs of autonomy, competence, and relatedness as advocated by self-determination theory. The current study provides evidence of a relationship between fulfillment of these psychological needs and the quality of mathematical discussion students report they engage in. Correlational analyses and structural equation modeling of data from 176 high-school geometry students were conducted to examine this relationship. Results support the claims of a connection between fulfillment of students' autonomy, competence, and relatedness and their reported engagement in mathematical discussion.

Classification: C74 C54 C24 C34

Keywords: mathematical discussion; reflection; internalization; geometry; engagement