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Learning using smartphone applications, discussion-based learning of mathematics.

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Summary: The purpose of this study is to analyze the influences of discussion-based learning of mathematics using smartphone applications on middle school students' mathematics learning. For this purpose, we selected 6 open problems suitable for learning mathematical reasoning and five 3rd grade middle school students as participants who expected to participate in 6 lessons of discussion-based learning of mathematics using smartphone applications. From the analysis of the 6 lessons, we found the following results. First, attending the lessons of discussion-based learning of mathematics using smartphone applications makes students more interested in mathematics and changes their mathematics learning attitudes positively. Second, the lessons of discussion-based learning of mathematics using smartphone applications facilitate students' mathematical communication with the help of various communication methods using many functions of smartphone applications. Third, the lessons of discussion-based learning of mathematics using smartphone applications provide teachers with a teaching-learning environment where teachers can easily give their students consultations about mathematics learning or daily life.

Classification: C23 D33 U73 C53
Keywords: learning attitudes; mathematical communication; discussion-based learning; smartphone application