

The Nature of Middle School Mathematics Teachers' Subject Matter Knowledge: The Case of Volume of Prisms¹

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ABSTRACT This qualitative case study examined Turkish middle school teachers' subject matter knowledge in terms of alternative solution methods that they propose to calculate the volume of prisms. The data was collected from four middle school teachers through the questionnaire, semi-structured interviews, and classroom observations. The results from the questionnaire revealed that the middle school teachers stated four alternative solution methods; volume formula, systematic counting, layer counting and column/row iteration. However, analyses of classroom observations showed that they only used the volume formula to calculate the volume of prisms in their lessons. Furthermore, it could be concluded that the variety of alternative solution methods changed with respect to the way that the researchers asked the questions even if all the questions were related to calculating the volume of prisms. More specifically, if the question was a little complicated and the teachers were not familiar with it, then the teachers focused on using the volume formula.