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Mathematics Education of Teachers - Developing a Language for Engaging Mathematics Problems.

MET II [CBMS, 2012] locates a most pressing concern regarding the education of mathematics teachers in grades 6-12. It is that "A primary goal of a mathematics major program is the development of mathematical reasoning skills. This may seem like a truism to higher education mathematics faculty to whom reasoning is second nature. But precisely because it is second nature, it is often not made explicit in undergraduate mathematics courses [p. 55]." In the absence of mathematics faculty making explicit means to engage mathematics problems, students are left to their own devices, as texts provide the most elegant/efficient formal expression, which means that whatever is learned that is helpful in mathematics problem solving, it will be of an informal nature. The proposed presentation will focus on solving mathematics problems by highlighting mathematical habits of mind that enable students to engage productively problems that lack an explicit procedure for solution. The argument will be made is that mathematical habits of mind need to be considered as content for a productive education of mathematics teachers. (Received September 15, 2017)