This case study discusses an attempt by a group of teachers who were undergoing a professional development course to model a pedagogical practice of teaching mathematics through problem solving. The author argues that this can help them gain a sense of efficacy over their practice as they learn that there are avenues for them to reliably enhance students’ mathematical thinking in a creative manner and to be able to apply their mathematical knowledge to problem solving in real-world contexts. Three recurring themes emerged from the case study were the experience of creative and collaborative problem solving, learning mathematics through mathematical discussion, and planning lessons that adapt to the emerging needs of learners. (Received September 17, 2015)