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The Challenge of Developing Expertise in Mathematics Teaching

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While the importance of expertise development in mathematics teaching has long been recognized, how to help teachers develop expertise to become adaptive experts remains a great challenge in mathematics education. The notion of expertise commonly refers to special skills and knowledge that expert teachers possess and demonstrate through their instructional practices. Such a notion connects well with various theoretical constructs about knowledge and competence that mathematics teachers can and should have. However, the process of developing expertise can hardly be simplified as acquiring a set of specific skills and knowledge. Collaborating and reflecting on professional practice of mathematics teaching should be utilized as important opportunities for expertise development, a perspective that goes beyond the knowledge-based characterization of expertise. In this lecture, I will revisit the notion of mathematics teaching and expertise in mathematics teaching, examine what we can learn from approaches developed and used in the East and the West for developing expertise in mathematics teaching, and discuss the needs of developing new perspectives about expertise and its development in mathematics teaching in different cultural contexts.