Figure 3.6. Types of Knowledge

Type of Knowledge	Current Opportunities: What Else Might We Need?
Mathematics content knowledge refers to a person's understanding of the skills, concepts, applications, reasoning methods, and connections within mathematics that are prerequisite to what is being taught, are aligned with what is being taught, and build from what is being taught (NCSM, 2014b).	
Pedagogical content knowledge refers to the critical knowledge that links specific mathematics content with effective mathematics instruction (NCSM, 2014b; Shulman, 1986). This knowledge is what enables a skilled teacher to determine the most effective instructional strategies for particular content.	
Mathematics curriculum knowledge is an understanding of how to sequence and organize the content for teaching (NCSM, 2014b). Typically, this sequence follows established learning progressions that are aligned with state standards and show how mathematics ideas flow from one grade or course to the next.	
Mathematical knowledge for teaching is "a kind of professional knowledge of mathematics different from that demanded by other mathematically intensive occupations" (Ball, Hill, & Bass, 2005, p. 16). This type of knowledge requires teachers to know deeply the interrelationships among mathematical concepts, skills, and procedures, much more so than someone who uses mathematics in their occupation, such as an engineer or accountant.	

Figure 3.6. Types of Knowledge

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