

## **THE POWER OF MATHEMATICAL TASKS FOR TEACHER TRAINING**

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Improving teachers' knowledge and skill to teach mathematics is a need in many places and contexts. Many efforts have been made to conceptualize, distinguish, and study the various components of the mathematical knowledge for teaching (MKT), but it is not evident the types of learning activities that might help teachers to develop such knowledge. In this talk, we will analyze two different approaches to construct and enact learning activities that promote teachers' engagement in the construction of some components of MKT. First, we will analyze in the instructional design of virtual activities of an e-learning professional development program, emphasizing how its learning sequencing promotes engagement in mathematical tasks that guide the user in both the reinvention of elementary mathematics and the development of professional mathematical knowledge. Secondly, we will discuss the design process of Mathematical Learning Units, which are lesson sequences designed to develop pre-service elementary school teachers' MKT on a relevant mathematical topic. We will discuss and compare design principles and strategies, as well as implementation results.

### **References**

Austin, J. L., & Howson, A. G. (1979). Language and mathematical education. *Educational Studies in Mathematics*, 10, 161-197.